

# Challenging the Future

*Connecting the Words in Risk Communication*

Jim Tully EDITOR





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# Contents

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Preface .....	v
Acknowledgements .....	vii
About the Authors .....	ix
Glossary .....	xiii
<b>1 What is Risk Communication? .....</b>	<b>1</b>
<i>Jim Tully</i>	
<b>2 Timing &amp; Targeting the Risk Message .....</b>	<b>7</b>
<i>Erica Seville, Dan Coward, Chris Galloway &amp; Kristin Hoskin</i>	
<b>3 Getting the Message Environment Right .....</b>	<b>29</b>
<i>Bruce Taylor, Kristin Hoskin &amp; Jo Martin</i>	
<b>4 Planning &amp; Delivery .....</b>	<b>49</b>
<i>Sharon Cuzens, Dan Coward, Chris Galloway, Ernesto Henriod, Kristin Hoskin, Derek Selkeld &amp; Mike Wood</i>	
<b>5 Listening, Learning &amp; Evolving the Process .....</b>	<b>81</b>
<i>Kristin Hoskin, Terry Day &amp; David Elms</i>	
Bibliography .....	101
Index .....	111



# Preface

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This book originated from a concern that information about risk was frequently not well explained, understood or applied.

Risk is a complex, multi-dimensional, socially constructed phenomenon expressed in various quantitative or qualitative ways, and understood (or misunderstood) to varying degrees by different audiences. The different ways in which individuals perceive risk, which determines their response to a risk, is an added complication. Effective risk communication acknowledges such complexities and focuses on improving awareness and management of risks. Risk communication succeeds when it uncovers ignorance and misleading information, and overcomes fear and distrust.

The challenge we set ourselves at the outset was to produce a book that would be a source of reference, but not a 'cookbook' of prescribed methods for communicating risk. It would be misleading to suggest that a 'one size fits all' approach to risk communication would work in all situations. Each situation will have its own unique set of circumstances and aims, and the manner in which risk is communicated needs to take those details into account. However, there are general lessons to be learned, and this book includes a number of case studies that offer ideas about the 'dos' and 'don'ts' of risk communication.

If this book succeeds in encouraging individuals and organisations to at least question and re-examine how they communicate risks, then it has achieved its purpose.

Bruce Taylor  
Chair of the CAE Risk Communication Project Steering Group





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# About the Authors

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## **Gordon Ashby**

Gordon graduated from Canterbury University with a BE (Civil) in 1991 and currently works for Solid Energy New Zealand Ltd. in the role of Manager, Risk Management. This position involves leading the development and implementation of the company's integrated risk management system. The role involves working at all levels within the company to foster compliance with good risk management practices, which requires a significant amount of coaching and mentoring to assist colleagues understand and implement the company's risk management policies. He has held this position for a little over 3 years. Working at Solid Energy provides Gordon the opportunity to focus on practical implementation of risk management processes and tools at all levels, from operational to strategic.

## **Barrie Cook**

Barrie is the principal of Niu Pacific Limited and has worked as a Research and Communications Adviser to the Earthquake Commission since the late 1980s. He has been closely involved with the development of the Commission's public education programme as well as research into the impact of the programme. Niu Pacific provides natural disaster-related services to other organizations and is a member of Natural Hazards New Zealand. Barrie has a Bachelors degree in Sociology and Psychology and a Masters degree in Sociology from Waikato University, and a Graduate Certificate in Antarctic Studies from Canterbury University.

## **Dan Coward**

Dan is currently the Deputy Chief Fire Officer of Wanganui and the Manager Operational Quality/Resources for Western Fire Region, New Zealand Fire Service. His background within the Fire Service has been from an operational perspective, but has also specialised in Health and Safety for the organisation. Having undertaken research into firefighter injuries, he has completed his Masters, specialising in Occupational Safety and Health, also a Graduate Diploma in Occupational Safety and Health through Massey University.

## **Karen Cronin**

Karen is a Senior Lecturer (part time) in Environmental Studies, in the School of Earth Sciences at Victoria University of Wellington. She is also completing a PhD, through the Victoria Management School, on risk communication. Her research is focused on the genetic engineering debate and the link between communication issues and risk decision-making and governance. Karen was Corporate Communications Manager for the Environmental Risk Management Authority from its establishment in 1997 to 2001. She has also held senior management positions in the Wellington City Council, the Ministry for the Environment and the World Wide Fund

for Nature. She was a member of the New Zealand Environmental Council from 1985-1987. She has been a member of the international Commission on Environmental Education and Communication, IUCN (the World Conservation Union) since 1996; and an OECD international working party on risk communication, 1998-2001. Karen was also a founding member of the New Zealand Society for Risk Management in 2000 and a member of the Society's management committee.

### **Sharon Cuzens**

Sharon is a Wellington-based communications consultant. She has 20 years' experience with a wide range of private and public sector clients (including Transpower, Inland Revenue, Ministry for the Environment and LTSA) in a variety of communications roles - from research, writing, editing, publication management and working with advertising agencies to strategic communications advice and management. Her work on *Challenging the Future* is done under contract with Transpower. Transpower is the owner and operator of the national electricity transmission grid and an industry sponsor and partner with the Centre for Advanced Engineering.

### **Terry Day**

Terry Day spent six years in his native Canada as a research scientist for Geological Survey of Canada, working on northern rivers, and on water issues for 15 years with Environment Canada. He has spent most of his nine years in New Zealand in local government management, and dealing with natural hazards while serving on the West Coast Regional Council aroused his interest in the field. His broad vision from experience in science, operational work and management is valuable to the New Zealand Centre for Advanced Engineering as Programme Manager for Sustainable Technologies.

### **David Elms**

David is a Director of the risk management firm of Optimx Ltd., and an Emeritus Professor of Civil Engineering at the University of Canterbury. He is particularly interested in the relationship between project contracts and risk management. He is a Fellow of the Royal Society of New Zealand and a Distinguished Fellow of the Institution of Professional Engineers, New Zealand.

### **Chris Galloway**

Chris teaches public relations at Monash University, Gippsland campus, Victoria, Australia. His research interests presently focus on linkages between public relations and risk communication, especially how public relations can help communities engaged in debates on risk questions.

### **Patrick Helm**

Pat is a Policy Advisor with the Department of the Prime Minister and Cabinet. His current responsibilities in the Domestic and External Security Group include, risk analysis, crisis management, and national planning to deal with major security

issues. In the past decade he has managed a range of government projects involving risk methodologies, and work to improve the assessment and control of natural, technological, and other hazards/threats in New Zealand. His career includes 5 years with Physics and Engineering Laboratory, DSIR; a secondment to the Ministry of Foreign Affairs; a diplomatic posting in Washington; and other secondments. He has interests in quantitative risk management, systems methodology, and strategic affairs.

### **Ernesto Henriod**

Ernesto is a civil engineer experienced in consultancy, contracting, owner's representative in projects, and development banking. He worked for 18 years in the World Bank, in positions ranging from a leading role in procurement policy, to senior management. He is the author and co-author of books, papers and policy documents on construction and management. He is currently a consultant, specialising in dispute prevention or arbitration and mediation in civil engineering and building contracts. He is also an Advisor to the New Zealand Centre for Advanced Engineering and to the Asia Construction Academy of Singapore.

### **Kristin Hoskin**

Kristin works in the specialist risk field of emergency management with Kestrel Group, based in Christchurch. She also manages the risk programme of the New Zealand Centre for Advanced Engineering, New Zealand's largest think tank. In this role she facilitates and contributes to projects and workshops on risk communication, organisational attitudes and partnered approaches to risk. She is also involved in the committees of a number of professional organisations working on projects ranging from conference organisation to implementation of recruitment strategies.

### **Jo Martin**

Jo has spent eight years at the Earthquake Commission where she has been closely involved with the Commission's public education programme. The programme encourages people to prepare their homes for natural disasters and explains the role of the Earthquake Commission. It includes advertising, schools programmes, brochures, fridge magnets, sponsorship and website development. Prior to joining the Commission Jo worked in communications roles for ENZA and the Hutt City Council. Jo has a BA in English and Sociology from Massey University and a Certificate in Journalism from Wellington Polytech.

### **Erica Seville**

Erica is director of Risk Strategies Research and Consulting, a small company specialising in bringing the principles of risk management, business continuity planning, and crisis management together into a common framework to maximise business resilience in the face of both foreseeable and unexpected challenges. Erica is also a research fellow in the Department of Civil Engineering at the

University of Canterbury where she leads a six year FRST funded research programme 'Resilient Organisations'. This research is developing innovative strategies for improving the resilience of New Zealand organisations to major crises.

### **Bruce Taylor**

Bruce Taylor is a Principal Environmental Investigator in the Office of the Parliamentary Commissioner for the Environment (PCE). He has a masters degree in public policy and diplomas in public health, air pollution control, and acoustics. His background is mainly in environmental health and he has a particular interest in environmental risk management. Prior to joining the PCE in 1995 Bruce held senior policy positions in the Public Health Commission and the Ministry for the Environment. He is a member of the New Zealand Centre for Advanced Engineering Risk Management Programme Advisory Group and he chaired the New Zealand Centre for Advanced Engineering Risk Communication Project Steering Group.

### **Jim Tully**

Jim is Head of the School of Political Science and Communication at the University of Canterbury. He has a special interest in science and health communication and has run numerous workshops on science communication for the Royal Society of New Zealand. Before joining academia Jim worked in daily journalism for 18 years, during which time he was editorial manager and assistant editor of the Auckland Star and the inaugural New Zealand Journalist of the Year. He is a frequent commentator on the media and judges many national media competitions.

### **Mike Wood**

Mike is an Associate Director of Broadleaf Capital International, a consultancy group specialising in strategic, enterprise and project risk management. His professional work includes consultancy services in risk management framework development and deployment, risk management training, and project risk management, including quantitative risk analysis. Prior to joining Broadleaf in 2004, Mike worked in the telecommunications industry for 30 years, initially in professional engineering roles and then in a variety of management positions within Telecom, including Strategic Risk Management Systems Manager. He is a Management Committee member of the New Zealand Society for Risk Management and a Fellow of the Institution of Professional Engineers New Zealand.

# Glossary

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<b>Consequence:</b>	the outcome of an event expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain. There may be a range of possible outcomes associated with an event.
<b>Consultation:</b>	discussion between parties on a topic with the purpose that all parties are able to express their views and to influence a decision in advance of it being made.
<b>Door stopping:</b>	technique used by the television media, particularly current affairs programmes, where the journalist or reporter pursues a person for comment often provoking aggression. This may include staking out the subject's house, car or workplace until they emerge. A typical response from the subject is an open hand on the camera or expressing displeasure at being pursued.
<b>Dynamic forum:</b>	a method of iterative communication where information exchanged influences further communication.
<b>Event:</b>	an incident or situation which occurs in a particular place during a particular interval of time.
<b>Frequency:</b>	a measure of likelihood expressed as the number of occurrences of an event in a given time. Frequency may also be expressed in other suitable measures, such as per million units, per head of population, per thousand births.
<b>Hazard:</b>	a source of potential harm, or a situation with a potential to cause loss or adverse effect.
<b>Irrational:</b>	without logic, may be emotionally based.
<b>Likelihood:</b>	used as a qualitative description of probability or frequency.

<b>Mental map:</b>	expression of spatial perception based on memory. This may or may not reflect current or historic geographic features accurately and can include emphasis on specific distinctive or personally meaningful features or events.
<b>Mindmap:</b>	diagram used to represent a flow of ideas radiating from a starting concept. Used for brainstorming.
<b>Mitigate:</b>	undertake activities to reduce the severity of impact.
<b>Outrage:</b>	a term that has been used to describe the reaction of the public to certain risks that they believe are being imposed on them. It comprises a subset of the hazard factors listed above. The factors that trigger 'outrage' are related to the degree of voluntariness, familiarity, control, equity, and moral relevance, distribution in time and space, and the nature of the risk.
<b>Perception:</b>	interpretation of an issue or situation from an individual's or organisation's point of view.
<b>Perceived risk:</b>	<i>see risk perception</i>
<b>Probability:</b>	the likelihood of a specific outcome, measured by the ratio of specific events or outcomes to the total number of possible events or outcomes. Probability is expressed as a number between 0 and 1, with 0 indicating an impossible outcome and 1 indicating that an event or outcome is certain.
<b>Psychographics:</b>	classifying people according to attitudes and other psychological criteria as distinct from demographics which classify people by statistics.
<b>Qualitative:</b>	measure by descriptive value, e.g. describing appearance, feelings, opinions, etc.
<b>Qualitative risk assessment:</b>	As explained in the text, where the likelihood or



the magnitude of the consequences are not quantified, the risk assessment is referred to as qualitative.

**Quantitative:** measure by numeric value e.g., it has a probability of 0.5.

**Quantitative risk assessment:** risk assessment where the probability or frequency of the outcomes can be estimated numerically and the magnitude of consequences quantified so that risk is calculated in terms of probably extent of harm or damage over a given period.

**Residual risk:** the remaining level of risk after risk treatment measures have been taken.

**Risk:** the chance of something happening that will have an impact upon objectives (It is measured in terms of consequences and likelihood).

**Risk acceptance:** an informed decision to accept the consequences and the likelihood of a particular risk.

**Risk identification:** the process of determining what can happen, why and how.

**Risk management:** the culture, processes and structures that are directed towards the effective management of potential opportunities and adverse effects.

**Risk management process:** the systematic application of management policies, procedures and practices to the tasks of establishing the context, identifying, analysing, evaluating, treating, monitoring and communicating risk.

**Risk perception:** the way in which individuals estimate risk. Risk perception cannot be reduced to a single parameter of a particular aspect of risk, such as the product of the probabilities and consequences of any event. Risk perception is inherently multi-dimensional and personal, with a particular risk or hazard meaning different things

	to different people and different things in different contexts (adapted from Royal Society, 1992).
<b>Risk reduction:</b>	a selective application of appropriate techniques and management principles to reduce either likelihood of an occurrence or its consequences, or both.
<b>Semi-quantitative:</b>	measure using an arbitrary scale e.g. using a relative scale of 1-5.
<b>Silo:</b>	in isolation of other organisations or people, ignoring interdependencies and relationships.
<b>Stakeholder:</b>	those people and organizations who may affect, be affected by, or perceive themselves to be affected by, a decision or activity. The term stakeholder may also include interested parties.
<b>Stakeholder map:</b>	radiating diagram used to identify relationships between organisations or people with a risk.
<b>Static forum:</b>	a method of discrete communication that is used to disseminate information with no expectation of feedback.
<b>Strategy:</b>	plan designed to meet policy needs regarding risk.
<b>Tactic:</b>	activity undertaken to achieve a specific risk objective.
<b>Tolerable risk:</b>	risk which is accepted in a given context based on the current values of society.
<b>Uncertainty:</b>	a lack of knowledge arising from changes that are difficult to predict or events whose likelihood cannot be accurately predicted.
<b>Weather bomb:</b>	large, sudden, powerful storm.

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## Introduction

Risk communication is a critical but sometimes neglected component of risk management, whether it relates to risks within an organisation, within a sector (e.g. public or private), or between an organisation or sector and other stakeholders. Poor communication, or no communication, of risk can lead to ill-informed decisions, over- or under-reaction to events, wasteful allocation of resources, and loss of confidence in systems and processes established to manage risks.

This book aims to promote risk communication skills and techniques central to the effective management of risk. Skills that need to be better understood by organisations and individuals with risk management responsibilities.

### Case Study – Cyanide Threats

Two threats to release cyanide into communities created unusual communications challenges for the Government in 2002/03.

An international golf tournament in New Zealand in January 2002, that featured Tiger Woods as the star attraction, came under threat some weeks earlier when the United States Embassy in Wellington was sent a letter containing cyanide and a note threatening to release the chemical at the Open. The quantities of the toxic agent and the tone of the letter made the threat seem credible and looked set to disrupt the event.

Standard government procedures for Domestic and External Security Co-ordination (DESC) were brought into play to engage a wide range of experts from science and industry in assisting the police in their assessment and management of the event. Security was heightened appropriately, and other risk mitigation measures were put into place.

As a deliberate part of the management strategy (to uphold public safety; to pre-empt misuse of the information; to attenuate any potential terrorist incentive; and to contribute to credibility and trust), it was decided that the public should be informed about the threat and advised on precautions.

Senior police went to the media to outline the essence of the threat, explain what protective measures were being put in place, and recommend individual precautions. The public responded prudently, accepted the inconvenience associated with the extra checks, and the tournament went without

problems. Police handling of the situation was rated highly.

A similar situation arose several months later when threats were made to release cyanide into water supplies and public places. Again the DESC system was activated, and relevant scientific and industry specialists were consulted to provide a sound technical base for the assessments. Police once again explained the situation in some detail, and members of the public were asked to assist by reporting unusual activities or patterns of behaviour.

These episodes underscored the paramount importance of communicating quickly and honestly with the public on risks involving public safety. Highly uncertain situations involving diffuse threats, or those where a disproportionate reaction to dampen down a relatively small risk could adversely affect thousands of people, are best managed by providing comprehensive information to the public. Doing so increases the chances that aberrant behaviour will be recognised at an early stage. Communications can thus be employed as a powerful tool for mitigation of the risks.

Pat Helm

The case study examples highlight how the effective communication of risk is an integral component of a much wider process of risk management. The nature of that relationship and its practical implications for practitioners is the underpinning theme of this publication.

### **What is risk communication?**

Risk is defined in the Australian/New Zealand Risk Management Standard (AS/NZS 4360: Risk Management) as “the chance of something happening that will have an impact on objectives” and is considered to have two dimensions: the likelihood of something happening, and the magnitude of consequences if it did.

Likelihood is a qualitative or quantitative description of probability (likelihood measured by the ratio of specific events to the total number of possible events) or frequency (rate of occurrence) in relation to how likely it is something will occur. For those who don't think in numbers, Chapter 4 provides a discussion of the difficulties and problems associated with using numbers to communicate risk.

Risk communication is the process of exchanging information between a range of stakeholders for the purpose of ensuring a better common understanding of risk-related matters. Sometimes the communication is specific, but it may also be general. For example, it may be part of a process of establishing communication channels and relationships in anticipation of future needs.

Risk communication is not simply a matter of notifying those potentially affected of the risk and what you intend to do about it or of ‘educating’ them to accept

your point of view. It is an interactive process with genuine communication and consultation aimed at building and keeping trust, as outlined in Chapter 3, and at the resolution of an issue.

It is essential to identify and acknowledge stakeholder perceptions and to understand how citizens react to messages about risk. Generally, people tend to over-estimate sudden, imposed risk and under-estimate chronic or life-style imposed risks.

The term ‘outrage’, is used to describe the reaction of the public to certain risks that they believe are being imposed upon them. The ‘Risk = Hazard + Outrage’ model created by Peter Sandman (Sandman, 1987) helps us understand why some of the traditional methods of risk communication have failed. The public’s acceptability of risks depends on their level of outrage. ‘Education’ – that provides them with ‘better’ information – may not alleviate their concerns.

According to Sandman, outrage management is “the engine of risk communication”. If you want to scare people mobilise outrage. If you want them to calm down, reduce the outrage.

Risk perception scholars, such as Sandman, have identified more than 20 ‘outrage factors’. Put simply, outrage arises, for example, when the risk is perceived to be:

- Involuntary: a voluntary risk is more acceptable than an imposed or coerced risk, for example, fluoridation of the water supply.
- Uncontrollable: when people feel helpless to change the situation.
- Unfamiliar: exotic, hi-tech risks provoke more outrage than familiar risks.
- Unfair: when some people must endure greater risks than others, for example, a prison in their neighbourhood.
- Dreadful: some medical conditions generate more fear, for example, AIDS and cancer.
- Uncertain: when scientists are uncertain or disagree.
- Memorable: a similar event embedded in the memory, e.g. Chernobyl, makes the risk easier to imagine.

The risk management process itself may also be a significant factor in provoking outrage if the organisation is perceived to be secretive, arrogant, untrustworthy or not interested in genuine dialogue and consultation.

Sandman has observed: “Many risk experts resist the pressure to consider outrage in making risk management decisions; they insist that ‘the data’ alone, not the ‘irrational’ public, should determine policy. But we have two decades of data indicating that voluntariness, control, fairness, and the rest are important components of our society’s definition of risk. When a risk manager continues to ignore these factors — and continues to be surprised by the public’s response of out-

rage — it is worth asking just whose behaviour is irrational.”

Effective risk communication is ultimately a dialogue in which you seek to identify the groups and individuals who will be affected and then target the message and mode of communication to suit. Chapter 2 addresses in detail targeted communication and Chapter 4 planning and delivering the message.

### **Risk communication is integral to risk management**

One of the myths of risk communication is that there is not enough time to develop a risk communication plan. Well, there is when risk communication is seen as an integral part of the risk management process. Procedures and protocols can be set in place and adapted as required – and at short notice.

Risk management, as defined in the Australian/New Zealand Risk Management Standard (AS/NZ 4360: Risk Management), is “the culture, processes and structures that are directed towards realising potential opportunities whilst managing adverse effects”.

The standard also defines the risk management process as “the systematic application of management policies, procedures and practices to the tasks of communicating, establishing the context, identifying, analysing, evaluating, treating, monitoring and reviewing risk”.

Clearly, risk communication as an integral part of risk management must be driven by, and supported by, senior management if it is to be effectively incorporated into management systems. This a recurring theme throughout the book.

In this context, it is important to remember the value of good communication within an organisation and with partnering organisations. All too often attention is focused on communication with external stakeholders such as the public. Chapter 4 outlines how staff can be involved successfully in the process.

#### **Case Study – Government Co-ordination on Risk Communications**

There has been increasing attention in the last decade in New Zealand to ensure that government agencies responsible for managing risks do so in co-ordinated ways. Risk issues are inevitably complex and characterised by high levels of uncertainty. While new analytical techniques are becoming available, they complement rather than replace close communication between stakeholders. This has been an important conclusion of experience in New Zealand.

To that end, governments in the last fifteen years have established institutional arrangements to ensure that risk issues in particular are considered interdepartmentally to the greatest extent possible. In some cases the obligations for consultation are prescribed in legislation (e.g., Resource Management Act 1991; Bio-security Act 1993; HAZNO Act 1996), while in others spe-

cific executive level mechanisms have been created. In the area of public safety and security, for example, government has established a system of Domestic and External Security Co-ordination (DESC) to manage a wide range of risk and uncertainty, and to communicate both across government and to the New Zealand public.

The DESC system is essentially a management structure based on two separate levels that interact closely:

- a strategic level comprising DESC Ministers and Chief Executives in central government who assess a situation, consider strategies to deal with the risks, approve high level policy, ensure that national resources are made available, and develop and promulgate co-ordinated messages; and
- an operational level, managed by the lead department, which closely monitors and assesses a situation, co-ordinates resources on the ground, interacts with local authorities and others directly engaged as appropriate, and manages the elements of response and recovery in accordance with the whole-of-government direction.

The DESC system has operated for nearly twenty years. In December 2001 Cabinet directed that this model be adopted for the management of all national crises and circumstances affecting national security. The DESC system provides the source and point of co-ordination for all whole-of-government.

DESC

### **The media environment**

A communications plan for external stakeholders, especially the public, will almost inevitably involve the news media – newspapers, magazines, radio, television and, increasingly, websites. How they portray a risk can be crucial in determining the extent to which a risk is seen as tolerable, and the extent to which a risk mitigation proposal receives public support.

Practical advice on dealing with the news media is outlined in Chapter 4, but any communication plan should be developed with an understanding of the contemporary media landscape.

The New Zealand media market is intensely competitive and dominated by a small number of mainly overseas-owned communication companies. There is a premium on getting the news first. In this environment, journalists can be vulnerable to public relations practitioners and lobby and advocacy groups, who know that the promise of a scoop or exclusive can lead to prominent placement of their story.

When the health product, Lyprinol, was launched in New Zealand in 1999 two media organisations were offered exclusive coverage by the South Australian manufacturer. Both gave extensive coverage to the dietary supplement made

from green-lipped mussels and its alleged cancer-curing properties. Within days, more than \$2 million worth of Lyprinol was sold. Neither media organisation had completed rigorous independent verification of the claims associated with the product before running their exclusives. In 2001 the distributors were fined \$15,000 for breaching Section 20 of the Medicines Act 1981 by selling a non-approved medicine. Widespread media criticism of the coverage proved embarrassing to both media organisations.

Competition also places a premium on conflict as a news value. Reporters striving to make the front page or lead the bulletin, and news organisations striving to outdo their rivals, can be very easily drawn into highlighting what they believe to be the strongest angle for the story – often the element of conflict. In this context, individuals and groups with a strong sense of outrage can exploit the media appetite for conflict-angled stories, especially when the issue is controversial. The differing, or even better, opposing views of scientists will be the angle when uncertainty is evident.

Journalists have always told stories through the experience of individuals, but this approach – ‘personalising’ or ‘humanising’ the news – is almost de rigueur. Communicating risk has been described in terms of ‘scaring people’ (alerting them) and ‘calming people down’ (re-assuring them). Each has to recognise the emotional response of the public. A powerful human interest story highlighting the personal plight of an individual affected by the risk at issue could well heighten the emotional engagement of the public and make it more difficult to address outrage.

When profit-driven media companies cut staff numbers, as they have in recent years, journalists are under pressure to produce more stories. Event-based reporting, rather than the investigation and analysis of issues, is more straightforward. It is much easier to report the protest against a proposed landfill or wind farm than to explore in-depth waste disposal alternatives for that community or sustainable power generation.

Finally, the emergence of the internet as a global public sphere has had enormous implications for agenda-setting, the dissemination of information and the reliability of information so widely available and so easily accessed. Communication strategies must recognise the pervasiveness and limitations of the internet in terms of effective risk communication reflected as rumours and hoaxes; false information; and bias. The power of official sources is undermined.



## Having the Courage and Commitment to Raise Potential Issues

In this section we address the question of when risk communication should begin and why organisations often find it so difficult to raise potential issues early, whilst there is still little ‘outrage’.

Organisations are sometimes tempted to remain silent about risks, often in the hope that the issue will never have to be raised at all. If the level of risk is assessed to be significant then it is obvious that risk communication efforts must start immediately to ensure that risk treatments are implemented effectively. What, though, if the level of risk is judged to be low or if there is currently too little information on which to assess the level of risk? Also, how are risk managers to convince a sceptical senior management team that they should be proactive in talking about risks, when the public and key stakeholders are currently nice and quiet – just as they would like them to remain!

When considering these questions it is important to reflect on the risk management process as illustrated in the Australian/New Zealand Standard for Risk Management (ANZS:4360). Their diagram (see Figure 2.1) of the risk management process clearly places risk communication and consultation as starting during the ‘defining the context’ phase and continuing right throughout the risk identification, assessment, evaluation and treatment phases.

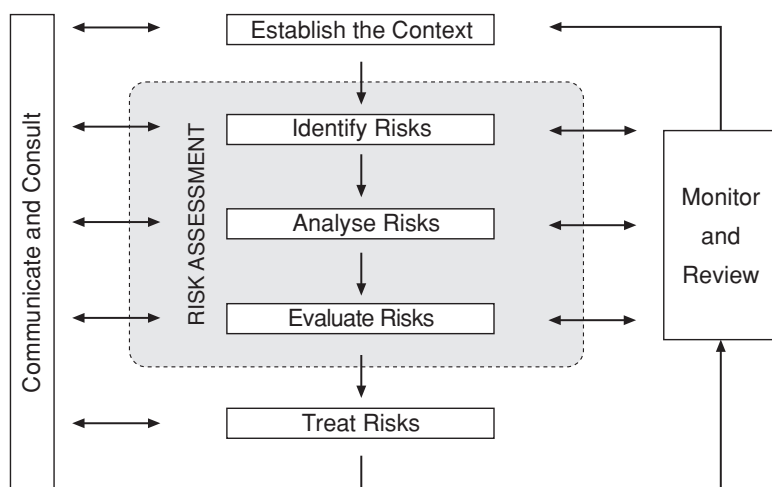


Figure 2.1: The risk management process (adapted from AS/NZS 4360)

This implies talking about potential risks and involving stakeholders right from the start, even before the magnitude and potential options for treating these risks are identified. This is by no means straight forward as it can potentially lead to short-term headaches for an organisation. But as we shall discuss, the potential long-term implications of not talking with and involving key stakeholders early can have far more dire consequences.

A key element in effective risk communication is trust. An organisation that has an established reputation for upfront, honest communication about risks will be a trusted source of information. Information given out by an organisation that has a reputation for only reluctantly talking about risk issues, or consistently presents information in over-reassuring terms, will not be seen as trustworthy, and will generally not be listened to (aspects of trust are discussed further in Chapter 3).

Trust is not something that can be earned overnight, and is something that can be lost very quickly. One of the fastest ways for an organisation to lose hard-earned trust is to be exposed as hiding information – either in reality or in perception. Both can be damaging.

This section focuses discussions around three arguments as to why organisations may not want to talk about potential risk issues:

- But the risk is actually quite small and talking about it will just scare people needlessly...
- But we don't know enough about it yet, so let's just wait until we have more information...
- But this might make us look bad – my bosses are never going to thank me for stirring this up...

One of the best-known international experts in these aspects of risk communication is Peter Sandman, and much of the information within this section has been drawn together from his various articles. More information on having the courage and commitment to raise potential issues can be found on Sandman's website, which is an excellent source of information ([www.psandman.com](http://www.psandman.com)).

As highlighted by Sandman (2006), the only times that an organisation should even consider withholding information about a potential risk is if *all* of the below conditions are met:

- There are absolutely no precautions against the risk that you want people to take.
- Stakeholders don't require any psychological preparation for what type of consequences might eventually emerge.
- You don't need any advice, cooperation or support to enable your organisation to effectively manage the risk
- If you did tell the public about the potential risks, there is nothing they would want to do, say or feel. Note that this point relates to how the risk is *per-*

*ceived* as opposed to how you have *assessed* the risk.

- If the worst case materialises, they will agree in hindsight that there were not any precautions or preparations they needed to undertake.
- They don't already know something about the risk and are waiting for you to tell them about it...
- No one else will tell them, and, if they do, they won't mind that you didn't tell them!

There are very few instances where all of the above conditions are met!

**But the risk is actually quite small and talking about it will just scare people needlessly....communicating with the public**

As a risk manager it can sometimes be tempting to not highlight hazards that have been assessed as being a small risk. One of the pitfalls of this approach, however, is that the public may perceive the risk to be much larger than has been assessed. The reasons why people perceive some risks to be more significant than others is discussed further in Chapter 3.

The problem for a risk manager is that unless they are talking with stakeholders about an issue, they are unlikely to know how the risk is being perceived. In this instance there are three very real risks that the risk manager faces by *not* coming out and talking about a risk issue:

- 1 If the public learn about the risk later they may question why it was not brought to their attention earlier. This may be viewed as a breach of trust, making future communications about this risk or other risks much more difficult.
- 2 If there is a sense that the information has been 'hidden' – intentionally or otherwise – then this will instantly have the effect of increasing the level of risk *perceived* by the public.
- 3 Similarly, if people feel that an organisation has not been open and honest with all information, then this will make them angry. In risk communication terms, 'Risk = Hazard + Outrage', and people *will* be outraged that information was hidden from them.

Justifications for withholding information because 'people might panic' are generally unfounded. The reactions of the public may not be exactly what you were hoping for, but they are unlikely to panic. *Never* legitimise people's fear and say that it is irrational – all that this will achieve is a demonstration of your lack of empathy.

When people learn about a risk and start taking (what are in your view unnecessary) precautions, this can actually be a form of emotional rehearsal in preparation for a real event. The challenge for a risk manager is in ensuring that awareness and preparation are at a level that is appropriate to the actual risk and that it results in a constructive outcome. This involves talking openly with stakeholders,

not only about the risk, but also about what steps people can take to be in a better position to cope if the situation does eventuate.

Thinking through the potential consequences to stakeholders and how they might cope with them can lead to people being motivated to become better prepared. In New Zealand, examples where public awareness campaigns have been designed to trigger this response include planning for a potential influenza pandemic or civil defence emergency. Within organisations similar awareness campaigns have also been used for workplace safety.

Another reason it is important to talk openly about risks is rumour. People will often fear the worst of a risk if information is not forthcoming or openly discussed. Fear then breeds rumour as misinformation becomes the basis of people's views and continues to grow as the 'rumour' becomes the 'qualified' view held.

**But we don't know enough about it yet, so let's just wait until we have more information....**

Another temptation is to hold back on talking with stakeholders about an issue until more information is gathered, analysed in more detail, and risk management options are developed. No-one likes to admit that they 'don't know'. However before delaying the release of any information about risks, it is important to ask yourself two questions:

- 1 Will a raised awareness be beneficial in terms of managing the risk?
- 2 How might the public *perceive* any delay in releasing information?

"Risk managers want a public that is simultaneously paying no attention and ready to act." Sandman (2006). Unfortunately, however, you can't have it both ways. If the potential consequences or risks are large and require a public that are both aware of the signs of immanent danger and ready to act to reduce their exposure, then talking about the issue (early) becomes a necessity.

If releasing uncertain information there are two golden rules:

- 1 Make very clear the uncertainty of the information and the implications that this uncertainty has.
- 2 Make a clear distinction for the public which actions should wait for more information to be gathered, and which should be undertaken now.

One strategy that can be used to ensure that people pay enough attention to the uncertainty of the information you are communicating is to 'ride the sea-saw' (Sandman, 2006). This strategy involves emphasising the bit of the message that you *don't* want people to focus on; they will then naturally jump on the other part of the sea-saw and focus on the part of the risk message that was intentionally not emphasised.

For example, in discussing a potentially high-consequence event with high vulnerability or uncertainty, you should focus on the potential consequence part. The

public will then naturally tend to focus on the uncertainties. Note that you can only use this strategy with a neutral public that has not already made up its mind if you are the good or the bad guy, and do not already have a heightened sense of outrage associated with this risk.

Again, the rumour mill is another powerful incentive for talking about risks promptly and openly. The potential rumours that arise from avoiding questions can be very damaging. It is natural for people to speculate, and they WILL, so your best bet is to be aware of speculation and to guide it as productively as possible.

Do not try to stamp out public speculation! This will drive it underground and make it seem like there is something to hide. As Lanard and Sandman (2006) highlight, “suppressed, unacknowledged and unexamined public speculation can lead to increasingly scary guesses”. It is never too soon to speculate – speculation is OK so long as it is not masquerading as certainty!

When releasing uncertain information, talk openly about the dilemma you faced in choosing to release it. Ironically, you should expect to be criticised for raising undue public alarm by highlighting potential issues when the facts have not yet been established. However, in the long run this criticism is likely to be far less angry and sustained than if information is withheld. By creating an ongoing flow of information, using regular information releases to set the context for risk discussion, it then becomes ‘normal’ (and far less alarming) to talk openly about the known and unknown, and what steps should come next.

**But this might make us look bad – my bosses are never going to thank me for stirring this up...internal implications**

It is important that all senior managers have an understanding of why risk communication is important and the potential reputation and financial impacts of not being proactive risk communicators. In particular, the short-term pain versus long-term gain element of risk communication needs to be resolved. There is little incentive for a risk manager to take a longer-term perspective if their performance is judged on the degree to which the public are apathetically letting the company do as it likes. A risk manager also needs to be mindful of the influence of other professions in shaping risk communication with the public. For example, legal implications may limit the ability to communicate freely on some issues. However, perhaps one of the most challenging aspects of risk communication facing the risk manager is gaining acceptance and understanding from others in senior management as to the role of risk communication.

The extent to which the company can openly talk about potential risk issues will also influence staff comfort with raising potential issues internally. An organisational culture that supports free flow of information and the proactive escalation of significant risk issues to senior managers is vital to establishing an effective safety culture.

The moral of the story is simple: if you continue to shoot the messenger, then the messenger will soon stop trying to deliver the message.

## Targeting Communication Efforts

### Challenges for risk communicators

It is the uncertainty associated with risk communication that makes it so challenging. Given that risk is about an assessment of how likely it is that a potential threat or harm will materialise, one of the key challenges for risk communicators is simply getting people to take it seriously. It is one thing for people to be concerned about an approaching storm: television pictures of the devastation caused by previous storms can help viewers picture the possible consequences of their not taking appropriate action immediately. However, when the danger is not concrete, such as concentrations of harmful particulates in the air, it is harder for people to confront the reality that *they* (not just someone else) may be at risk and *they* personally need to act.

People exposed to a risk may be affected to differing degrees and may react more or less resiliently according to their personality. For some, the arousal of fear and dread may be sufficient to provoke appropriate self-protection behaviour. Others will demand proof – and it is here that a particularly awkward dilemma for communicators arises.

As Britain's Prime Minister, Tony Blair, has noted, many people equate science with certainty. They expect scientists and other experts to be able to make definitive statements about the presence or absence of risk, and to provide reassurance that if risk does exist, all reasonable steps are being taken to mitigate it. However, experts may not only be unable to provide unequivocal answers but may disagree among themselves.

Further, research over a number of years has explored the idea that experts and the lay public view risk differently. An expert may focus on calculating the likelihood of an identified risk becoming a damaging risk event. For example, how likely is it that the risk of water discharged from chemical plants will actually affect fisheries and therefore consumers' health? The expert findings may be couched in technical language, or expressed in complex sets of data. However, consumers and people without expert knowledge are likely, the research shows, to be more concerned about other questions, such as whether they have been told about the risk and given the opportunity to accept it voluntarily, or not.

Because experts and those without expert knowledge tend to look at risks differently, risk communicators should not assume that it is sufficient to simply disseminate expert opinions. Rather, communicators need to use appropriate research techniques to help understand the ways that different 'publics' – groups interested in or affected by a risk issue – are thinking about the risk.

- How much knowledge do they have?
- Where is it coming from?
- What additional knowledge do they need?
- What sources of information do they trust?

- What are their chief concerns?

Questions like these can help build up a profile of risk audiences as a basis for a communication campaign.

### **Case Study – New Zealand Fire Service**

In 2003, changes to several sections of the Health and Safety in Employment Act 1992 to include coverage to volunteers sparked an outcry from numerous community-based organisations that relied heavily on volunteers. One of these changes, introduced in the H&SE Amendment Act 2002 (which came into effect 5 May 2003), was to treat volunteers as employees for the purpose of sections regarding hazard identification and control. Another was to make volunteers legally obliged to take all practicable steps to ensure their own safety and that of fellow workers. The New Zealand Fire Service was one national organisation that relied on some 10,000 volunteers to meet its commitment to emergency response and fire safety education in communities throughout New Zealand. The Fire Service found itself in the position of questioning the level of communication required to mitigate the fears that were prevalent within the volunteer contingent of the organisation, when to undertake communication, and how.

Within the volunteer contingent, the level of personal risk was perceived to be significant. The concern was personal litigation from either the Department of Labour or private prosecution as a result of injuring a member of the public while carrying out the role of volunteer firefighter.

The level of risk from an organisational perspective of the changes to the Act was low. Close communication and involvement with the changes had been undertaken by Fire Service senior management and government departments. Despite this, the organisation recognised the need to communicate with all members to mitigate their fears; the risk being a backlash at the organisation through the resignation of volunteer firefighters.

A series of presentations across the country by members of the Fire Service followed an intensive 2-day training and awareness seminar held and supported by specialists from the Department of Labour and the Fire Service for key representatives from across the volunteer contingent of the Fire Service. The timing of presenting the information amongst members was precise and was completed as the changes to the Act were formalised in Parliament and came into effect.

The result was the successful introduction of a piece of legislation that ultimately enhanced the working environment and conditions of volunteer firefighters. These changes are still evident today with continued introduction of programmes and policies that support volunteerism amongst the Fire Service.

*But the risk is actually quite small and talking about it will just scare people*

*needlessly...*

The Fire Service determined the impact of the legislation changes were more positive than negative for the organisation. They also recognised the impact that rumour would have on the perception that existed amongst the volunteer contingent and the resulting backlash if no communication strategy existed. In taking this approach the Fire Service undertook to inform and raise awareness. Those volunteers who feared the changes were able to become better prepared and have coped with the legislative change.

*But we don't know enough about it yet, so lets just wait until we have more information...*

“Provide information about both aspects of the risk, its low probability and its high magnitude. But put your focus, paradoxically, where you don't want your stakeholders to put theirs” (Sandman, worst case scenarios). In taking the message to the volunteer contingent, the Fire Service was able to present the likelihood of a prosecution occurring and all the steps in place to mitigate this. The response, as predicted, was that the outcome of prosecution is insignificant. From this point the act of moving the balance on the sea-saw began. Sandman states “Then after your stakeholders are well-ensconced in the other seat, slide toward the fulcrum from your end; with any luck they will make a parallel move from their end. The closer you both are to the fulcrum, the easier it is to switch sides periodically, each of you reminding the other of whichever half of the ambivalence is being neglected” (Sandman, worst case scenarios).

*But this might make us look bad – my bosses are never going to thank me for stirring this up...*

The proposed legislation changes were announced in 2002. The Fire Service undertook its information and awareness campaign in March of 2003, only weeks from when the change took place. Prior to this, concern and speculation was rising amongst the volunteer contingent over the impact the changes would have on them as individuals. At a higher level the Fire Service was undertaking an intensive period of legal advice and raising their own awareness of the impact the legislative changes were going to have. The Fire Service approach to mitigating the concerns of the volunteer contingent was intentional in so far as the process and programme was carefully thought through. The balancing act that was played out came about throughout the communication and awareness process, much in the fashion as described by Sandman.

The Fire Service took a proactive approach to communicating the risk to all facets of the organisation with the knowledge of the risks that existed in not undertaking a risk communication strategy, the potential impact on its reputation and the risk of volunteer resignations nation-wide.



If people targeted to receive risk messages are stressed or under pressure in some way, they may have so much ‘mental noise’ that it is difficult for them to pay attention to the messages, to understand what they are being asked to do, and to take appropriate action. They not only need accurate information but also information presented in a simplified form, one that is easy for them to take in.

Here, risk communicators can advise on how to ‘package’ information so it is expressed in brief, memorable messages that have the best chance of cutting through the anxiety-driven clutter that may be affecting people’s ability to process new material. Research can not only help to identify the best way of designing messages, but also highlight the most appropriate, trusted media to use. These may not always be mass media channels: if, for example, children are likely to be exposed to a risk, school, kindergarten and childcare centre leaders may be more credible sources.

### **Identifying the key stakeholders and influencers**

Risk communication needs to reach the audiences to whom the communication will be most relevant. The ‘general public’ may need to be reached only rarely; more often, it is likely that risk communicators will need to target specific publics such as the residents of a particular locality or people characterised by a shared exposure to a particular risk.

Communicators need not only to identify the groups they need to target, but also to prioritise them: some will be more important than others. For example, some groups may be more directly involved than others; one group may be more disposed to activism and protest about a risk issue than others who are concerned but unwilling to become active. The communications task is not only to identify stakeholders but also to locate key influencers.

Stakeholders are defined in many different ways by various authors, but a common theme is the idea that a stakeholder is someone who either is, or considers themselves to be, affected by an issue – or someone who has an ability to affect the way an issue is handled. The result may, in the stakeholder’s view, be either positive or negative.

An ‘influencer’ is an opinion leader, someone to whom others turn for guidance as to what position they should take on a particular issue. This guidance does not have to be through direct exposure. For example, a media spokesperson for an action group that stakeholders on a given issue regard as trustworthy and credible may act as a key influencer for the stakeholders, helping to shape their opinions. Influencers may fulfil this function in a number of settings, as they typically have a broad range of interests and social circles. One study has shown that 10 percent of Americans have the power to influence the habits of the other 90 percent.

There are a number of tools available for identifying stakeholders. The important

### **Case Study – Environmental Risk Consultation**

New regulations in the last 15 years for consultation about environmental risks have led to local and regional councils in New Zealand putting a great deal more effort into involving the public on such matters. The mechanisms for doing so are not yet fully bedded down in the case of risks involving large communities, but there have been good examples at the district level.

One such case concerned dangers to the Franz Josef Glacier Village on the West Coast of South Island which was known to be at risk from a number of natural hazards – flooding, landslide, collapse of a dam across a river, and major movement or earthquake on the Alpine fault.

To ensure that the local community was fully engaged in the process of exploring options for mitigation, the West Coast Regional Council commissioned work on a qualitative analysis of community perspectives as a means of establishing preferences for management of the hazards. This was a protracted process over three years but raised the level of understanding of the issues among all stakeholders.

The Council now has good information on the community's understanding of the natural hazards and their levels of personal and collective preparedness; and the people are now well informed about their risks, feel adequately involved in solving the problems, and when committed to particular solutions can be expected to understand where and why compromises have been made.

thing is to use some kind of structured approach, probably one based on asking a set of questions such as “Who is most affected here?” or “What is their chief concern or interest?”. A preliminary list can be the basis of brainstorming to identify stakeholders other than the obvious ones. The result can be categorised according to the level of interest in or concern about the issue, degree of support or opposition to it, or ability to influence an outcome.

Stakeholders can also be categorised according to their information needs, psychographics (opinions, attitudes and feelings) and also demographics (age, location, income level and so on). This ‘stakeholder mapping’ needs to take account of the fact that people may belong to more than one stakeholder grouping. For example, a member of an environmental action group may also be a resident of a district that the group considers to be at risk of environmental degradation in some way.

For communicators, this makes it imperative to understand the dynamics of the major stakeholder groupings with which they have to deal. Stakeholders are not just message targets: they are people with their own interests, agendas and opinions who will not necessarily passively receive risk messages. Rather, they

### **Case Study – Nuclear Ship Safety**

In 1991, after nearly two decades of ‘anti-nuclearism’ in New Zealand, the government of the day directed that a comprehensive study be undertaken of the safety of nuclear powered ships in order to help decision-making about allowing visits of such vessels to this country. It established a committee of enquiry with some experts in relevant disciplines, gave it Terms of Reference that encouraged a thorough and impartial assessment, and provided funds and facilities to ensure that it could do so.

The Special Committee on Nuclear Propulsion approached its work in an innovative and professional fashion and used a variety of established risk assessment methodologies to explore the subject. Despite the complexity of the issues, and New Zealand’s relative inexperience with nuclear technology, the Committee was given access to some of the best technical information available and was able to consult closely with experts around the world. It was able to come to unambiguous conclusions and delivered a comprehensive report to government in late 1992. This report has been subsequently assessed by specialists in other countries who have described it as ‘analytically brilliant’ and praised it in the highest of terms.

Domestically, however, the conclusions were not well received by the general public despite the fact that the work had addressed both the sensitivity and the uncertainty of the technical issues. It was not government policy at the time to try to influence public perceptions on this issue and so the review did not allay public apprehensions. This experience underscored the point that risk communication is a complex process, and that expert assurances – regardless of the quality – are usually insufficient in themselves.

may resist or seek to redefine them. Neither should stakeholders be thought of as opponents, from an organisational point of view. It may be possible to recruit their support, or at least their tacit endorsement, of a risk assessment and management strategy.

## **Understanding Stakeholder Perceptions**

*Not everyone knows that you are a ‘good guy’, or has your appreciation of the risk. Here we look at the way messages are received by stakeholders and at some components of miscommunication.*

### **Psychology of risk communication – how people interpret and respond to risk information**

In order to understand or even appreciate stakeholder perceptions of a risk it is necessary to understand what risk perception is and how it is shaped.

A person's perception of risk is that person's understanding of the magnitude of the risk based on their personal belief. Ultimately risk perception is subjective, with their belief being moulded by many influences. These might include matters of fact and statistics but extend beyond these. For this reason, risk perceptions of the same situation can and often do vary greatly between different stakeholders, subject to individual values and judgements of what is important and reasonable.

This section explores some of the factors that shape risk perception and underline the importance of understanding what influences risk perception in any specific situation. This understanding is essential for any successful risk communication strategy.

Both analysts and the lay public assign values to risk based on assumptions about vulnerability. However, whereas the analyst might use a risk equation and quantify the risk in terms of human life, financial impact or duration of recovery, the layperson will typically assign less quantifiable values based on inputs such as memories, fears, emotions and a variety of information sources of variable accuracy. Thus the analyst and the layperson will see the situation differently. They may acknowledge a common hazard but their means of assessing the risk is quite different. While the analyst balances vulnerability with statistical probability, the layperson will focus on the personal losses that could result - on the vulnerabilities that could be exposed and how important it is to protect them.

For example, many pedestrians recognise that there is a risk associated with crossing a road against the lights but they seldom perceive the risk to their personal safety to be sufficient to wait for the lights to change. By comparison few people would advocate that an adult accompanied by children cross against the lights. The risk is perceived to be greater and tolerance of the risky behaviour is reduced not because of probability but because of what the potential loss is.

Research has shown that stakeholder risk perceptions are built upon many inputs. Some are:

- interpretation of presented facts;
- trust in the other stakeholders;
- previous experiences with risk events;
- previous experiences with the other stakeholders;
- personal potential losses or gains;
- level of influence in determining the risk strategy;
- ability to determine their own risk exposure (voluntariness);
- behavioural traits (e.g. tendency towards independence);
- external sources of influence (e.g. tradition, media coverage);
- personality traits (e.g. dislike of other stakeholders); and
- ability or inability to comprehend consequences.

For any stakeholder or situation, the influence of these inputs will vary.

It is the judgements made based on such inputs that determine the overall perception of risk. Moreover, the layman's perception will be very much based on a subjective assessment of information. Because the perceptual frameworks of risk practitioners and laypersons are so fundamentally different, it can be difficult for the two to find common ground. In some cases the perception may appear unreasonable to others but there is always a reason behind the belief.

This is an important point. Without appreciating in some depth the influencers of a stakeholder's perception it will be difficult to determine whether there is potential to address concerns and move forward. Such understanding requires dialogue.

External information sources such as news media can strongly influence risk perception and risk response. Singer and Endreny (1993) contrast the different objectives of risk communicators and news reporters:

*(The goal of risk practitioners is) To communicate information about hazards and risks in a way calculated to foster rational decision-making ....*

*But reporting about hazards is ordinarily reporting about events rather than issues, about immediate consequences rather than long-term considerations...*

The contrast in these two approaches comes about because the reasons for their communications are different. The prime motivation of the risk communicator is to influence the future of the risk – to be proactive in terms of educating, raising awareness and promoting action or support for a risk strategy. The reporter, on the other hand, is focused on the now, motivated by the current level of general public interest, what else is topical (competing stories), and a desire to report events and opinion. Putting it in another way, the risk practitioner will tend to focus on the facts of the situation, while the reporter will focus on the drama, the 'story'. Success for the risk communicator is discussion and action, while success for the reporter is readership and memorability. Because of these differences, the language, emphasis, style and content will also differ significantly. It is therefore hardly surprising that the two groups have very different influences on stakeholder perceptions.

Moreover, a story will have more influence and be more easily remembered than a set of facts, hence the age old use of stories in the form of parables, fables and so on as educational tools. Stories tend to be personable and easily related to whereas 'cold hard facts' are often viewed as abstractions, remote from the context of daily life.

If it is assumed that, as Singer and Endreny state, the media focus on events and immediate consequences, then this closely aligns with the way that individuals

perceive risk. The individual's focus is not on risk planning, but rather on the impacts of risk realisation. People can relate to this approach more easily than they can to an analytical representation of risk.

It is worth commenting further on the impact of the media in shaping risk percep-

### **Case Study – Mt Ruapehu Eruption**

A dormant volcano in the central North Island of New Zealand went through a two-year eruptive phase in 1995/96. Concern at the time about risks to nearby communities, to skiers on the mountain, and to aircraft flights nearby built up to the point that the government became engaged. Some in the scientific community had become caught up with the extreme consequences of 'worst-case possibilities', which had led to a degree of public apprehension. These fears had become magnified overseas to such an extent that winter tourism had declined markedly.

In order to arrive at an assessment of the dangers, Cabinet directed that a risk review take place that was well grounded in hazard realities. Experts in the various geophysical disciplines were brought together for several days, not only to analyse the risks but to think through the implications for people and communities, and to consider mitigation possibilities.

The use of a structured risk assessment took the focus off the most extreme and highly unlikely volcanic possibilities, and helped put the community risks into better perspective. It highlighted the need to understand the complete integrated safety picture, not just the source of the problem, and it underscored the value of dispassionate risk communication in reassuring the public. New arrangements for monitoring the volcanic activity were put in place and response mechanisms were re-aligned to the specific risks.

The risk communication that followed was done in accordance with classic principles of consultation and communication. The Prime Minister at the time took a close interest; he visited the area and talked extensively with local people; there was a great deal of two-way exchange with those affected; and a communications programme was put in place to address concerns and reassure visitors and residents on the basis of collective expert views. The outcome was that tourists returned to the area, the ski-fields began operating again, and people learned to accept the low level volcanic activity.

This experience brought out several important communications themes: the concerns that can be generated among members of the public about unfamiliar geophysical effects when scientific experts disagree; the knock-on consequences, especially the messages that can be picked up by risk averse people overseas; the importance of two-way communication; the misapprehensions that can be created through excessive media focus on narrow risk issues; and the value of plain communications backed by rational risk assessment.

tion. It has been found (Lee, 1981) that although we draw upon our own past experiences in shaping risk perceptions, our experiences are seldom extensive and media reporting is often drawn upon instead. A study following an earthquake in the USA (Rodrigue *et al*, 1997), that compared mental maps of significant earthquake damage made by locals with actual damage maps, found that the test subjects (the locals) produced maps mimicing the media portrayal. This was in contrast to the actual severity of damage in the area of the subjects, which was greater, but received little media attention. Here again, people were more influenced by stories than by facts.

An additional point is that media stories tend to be of actual events – of disasters and so on – and so will scare people. It is far more difficult to reassure people than it is to scare them, especially when they have already been scared. This is where the issue of trust becomes important. Trust is addressed further in the following chapter

Risk perception can be biased in two ways, depending on context. If the risk is perceived to be greater than analysis would indicate, it can lead to attitudes and actions aimed at blocking a proposed activity, as with the objections to Project Aqua on the Waitaki River. On the other hand, if the risk is perceived to be negligible, which is often the case when an event has not occurred for a substantial time, as with New Orleans 2006, the response may be inactivity or complacency. The latter response generated when a risk is presented often frustrates risk practitioners. Inactivity or complacency is strongly influenced by perception.

Once again the interactivity implicit in risk communication is a tool that can be used to overcome this inaction. Risk communication strategies can be customised to meet the needs of stakeholders in a way that increases understanding and is more likely to generate consequential action.

Communicating about risk provides the risk practitioner with an insight into the types of influences that are shaping perception. This can allow a practitioner to focus and shape risk information in a way that relates to their stakeholders, for

#### **Case Study – Ohakune**

An example of differing risk perceptions was found in a study of the resident population of Ohakune (Patton *et al*, 2000). Ohakune, near the base of Mt. Ruapehu, is exposed to volcanic hazards. Occupations are predominantly either agricultural or winter sports based. The study found that those in the agricultural sector thought there was no need for risk mitigation for volcanic hazards because they did not see any great risk. In contrast, the beliefs of those in the winter sports sector were influenced by their occupational dependence on the mountain. They indicated that there was indeed a need for volcanic hazard mitigation. In this case the risk perceptions of the two groups were strongly influenced by the nature of their experience and interaction with the mountain.

example changing the format or language to accommodate stakeholder needs. This might include emphasising potential personal consequences of inaction or relating statistics to probabilities of more familiar events.

The value of stakeholder communication is sometimes limited to achieving buy-in, but more often the true value is in obtaining stakeholder input to validate or improve risk assessments and strategies. Understanding stakeholder perceptions allows the risk practitioner to better appreciate the context of the risk and appropriateness of risk strategies. The risk practitioner may not initially be cognisant of some of the broader consequences of a given strategy. Applying stakeholder values provides a test of the robustness of a risk strategy and may provide insight into consequences that have not previously been considered. As such, input through risk communication can serve to refine and improve risk strategies.

The following case study gives an instance of a successful risk communication strategy, and shows the importance of obtaining community trust and buy-in. Its success depended on the strategy addressing the actual needs of people in a way that they could understand and appreciate.

### **Tailoring the Message to Suit the Audience**

Case studies throughout this book illustrate that there are a variety of approaches to communicating about risks and that there is no single solution that fits all situations. One commonality that does appear is that effective risk communication requires tailoring to suit the needs of all stakeholders.

Regardless of the current stage of the risk management process taking place, a risk communicator needs to identify the concerns of the stakeholders that need to be addressed. This requires the risk communicator to think about the risk in two different ways. Firstly – what information do I seek to convey and what action do I wish to generate? Secondly – what concerns and potential misconceptions on the part of stakeholders do I need to address?

Correcting misconceptions and addressing major concerns (if there are any) are two of the most constructive ways of influencing the risk perceptions of the audience. They raise credibility and help to direct focus towards the core messages. It is difficult for people to take in information if other issues are preying on their minds. Addressing concerns will enable the stakeholders to be more receptive to information and ideas that are presented.

Being mindful of the needs of all parties involved in the risk communication will allow for greater customisation of the content of the communication.

### **Communication forum**

The next consideration is to determine the format of the communication and the forum within which discussion takes place. The choice of available communica-



tion options has increased markedly over the last 20 years, but primarily comes down to the following considerations:

- desired level of interaction;
- accessibility and usability of the forum for all parties;
- time frames;
- number of stakeholders (for this communication); and
- budget.

### **Case Study – Te Kotahitanga**

Te Kotahitanga is a project that has been running in Northland for a number of years for the purpose of reducing fire risk in the home (Hoskin, 2006). Since its inception several similar projects have been run in various parts of New Zealand collectively making up a larger fire safety ambassador programme. This programme is coordinated through the New Zealand Fire Service with support from other organisations.

The objective of the programme is to reduce fire deaths in the home by encouraging people to implement home fire safety. This includes reducing the risk of fire and having plans for how to get out of homes if a fire occurs. The programme includes a number of interactions, as explained below.

Fire Safety ambassadors visit the home and provide educational material that they then talk about and relate to the specific home. They survey the home for fire hazards and advise on how these can be addressed and what the potential consequences are of not addressing them. They also advise on and provide tools for developing a home fire evacuation plan. Ambassadors elicit agreement from the occupants to develop and practice the plan within a certain time frame in exchange for upgrading the home smoke detectors. The ambassadors then check the location and efficacy of smoke detectors in the home, moving, replacing and installing detectors as needed. Before leaving the home they provide an opportunity to discuss everything they have done and ask specific questions to determine the occupants' understanding of the risks. Follow up visits and phone calls are used to interview occupants and confirm that home evacuation plans are put in place, to reinforce messages that were presented, and provide further advice if necessary.

The success of the programme is evidenced by discussion of fire safety in the community through referrals to the programme and by the high follow-through in occupants taking action to reduce fire risk in the home. Interviews conducted over a six-month period indicated a heightened awareness and continued activity to reduce fire risks by respondents with feedback consistently emphasising appreciation of the way the risks were explained. The level of comprehension was significantly greater than that of the control group.

The suitability of a communication forum will vary with the content of the communication and the relationship with the stakeholders. A basic consideration is whether a dynamic forum or a static forum is more useful. Dynamic fora lend themselves to interaction whereas static fora are primarily, but not exclusively, a means of information dissemination. It may be that a combination of the two is needed with one providing input to the other.

A dynamic forum (such as a public meeting) means that you can easily get feedback and determine the effect of the communication. It may be that you want feedback in order to shape the communication as it progresses, to shape the next communication or to provide inputs to the risk management. Dynamic fora provide an opportunity to understand needs and stakeholder concerns as well as to gauge the level of understanding that different stakeholders have. It may be that the stakeholders want a dynamic forum because they want input into the risk management. They may need to vent frustrations or have specific questions addressed.

Dynamic fora require an interactive approach and have the potential to become confrontational. There is also the potential for outspoken individuals to increase their sway with the rest of the audience, but they can also provide an opportunity to establish relationships and to appreciate how the needs of stakeholders will have to be incorporated into the risk strategy.

For a successful meeting, it is essential that the risk communicator has a clear understanding of group dynamics and individual psychology. If, for example, the aim is to correct some misapprehensions, the first thing is to remember that they are usually emotionally-held views. The strategy must therefore be to deal first with the subconscious, emotional side of things. This will generally involve building trust, a matter discussed in the next chapter. Various techniques can be used. But only after the unconscious issues have been dealt with can facts be introduced to correct the misapprehensions.

Examples of dynamic fora: Surveys, one-on-ones, public meetings, workshops, weblogs and wikis.

A static forum (such as a newsletter) provides greater control over content and a better ability to structure communication. Static fora are ideal for information dissemination and provide stakeholders the opportunity to consider the information at their leisure, confer with others, or to ignore it. Static fora allow for delayed response and can be particularly useful where individuals want time to prepare a response. Static fora are more difficult to assess in terms of efficacy than dynamic fora. Static fora do not easily lend themselves to an uptake of behaviour change or increased ownership of the risk but are useful in providing detailed information and maintaining contact.

Examples of static fora: Newsletters, press releases, media interviews, websites, lectures, posters, feedback forms.

### *Stakeholder characteristics*

Regardless of whether static or dynamic fora are employed it is important to make sure that a 'one size fits all' approach is not used. Not every risk communication will involve all stakeholders and not every risk project will span public through internal stakeholders. A useful first step is to compartmentalise stakeholders into groups. This allows the communicator to customise both content and fora to suit stakeholder needs. Considerations will vary with each risk project. The following demographic distinctions illustrate this.

Geography, demographics and socio-economics all have to be considered in tailoring a risk communication. There is little point developing a website as a forum for information dissemination if only 10% of the audience is computer literate and has Internet access. Similarly the response to a public meeting during work hours is unlikely to be high for those with day jobs. It may however work well for older populations that often don't like to drive at night. Low socio-economic groups may not receive daily newspapers and rural populations may have infrequent postal access.

The education and profession of the audience will determine the nature of the language to be used and what components of the risk are of highest concern. For example; company directors are likely to want to address strategic issues, departments within organisations may be interested in logistical details, residents are concerned about environmental and lifestyle impacts, and shop owners want to know the nature of disruptions to business and impacts on sales. Internal risk communication, such as with staff, is likely to allow for the use of industry jargon, and an expectation of understanding of the risk concepts and implications. In contrast, clients may not be as conversant, and generally every effort should be made to avoid jargon. The inclusion of background material and detailed explanations may be required in order to facilitate an understanding of the risk implications and what is required in order to address the risk.

Customising the messages and the way they are initiated and exchanged can contribute greatly in evolving both the specific and overall risk strategies that are developed.

### *Time frames*

Anticipating disruption or impact periods and incorporating time frames into the content of the risk communication as well as mapping out the time frames for the communication are crucial. Without an appreciation of the time scales involved it is difficult to schedule and to progress the risk communication appropriately.

Questions to consider when planning time frames might be:

- How long is there to prepare?
- How quickly is feedback required?
- What consultation period is specified?

- How many communications are anticipated?
- Is the risk communication reactive?
- Over what period will people be affected either by the risk or risk related activity?

All of these questions feed into determining the available time frame for preparing a strategy and for planning the delivery and engagement schedule.

If the next communication is to be a newsletter in two weeks time and there is a television exposé tonight it might be worth re-evaluating the risk communication schedule in order to get as much benefit (or redress concerns as promptly) following the television coverage as possible.

Clarity regarding the objectives to be achieved within a time frame is also important. Holding a staff meeting on the options for addressing a risk after a preferred strategy has already been determined is bound to result in controversy and potentially alienation. In contrast, holding a staff meeting in order to address concerns about the strategy's implementation phase and raise awareness of short term risks arising from that strategy may well be appropriate. The first meeting scenario would encourage a perception that the organisation doesn't care what staff think, whereas the second encourages a perception that the organisation is attempting to minimise disruption and consider staff needs. The perception of the organisation will then impact on the acceptability of the strategy that is taken.

The time frame and extent of impact associated with risk realisation (a predicted risk event occurring) requires consideration. If the risk or risk strategy is going to adversely affect many people at the same time there will be greater concern than if the same number of people are affected in smaller increments. This is best illustrated through disasters. The impact of the Ballantyne's Fire in Christchurch in 1947 was instrumental in shaping fire safety in New Zealand (see Chapter 4, pages 71-72). The fire had a high death toll because many of those that were in the building did not perceive the threat as more than a temporary inconvenience until too late. The public outcry that ensued and the subsequent changes to legislation were a direct reaction to the number of deaths in that single event. If 41 people had died in 41 separate fires across the city over a year it is unlikely that the response would have been as great or far-reaching.

In summary, the core components of effectively timing and targeting risk communication are to consider stakeholder needs and perceptions as a part of determining the overall risk communication strategy and each individual communication. Risk communication provides feedback to all that are involved, in this way shaping perceptions of risk communicators and stakeholders. As these perceptions evolve, so does the ability to best determine the way forward in addressing the risk.

Finally, three detailed requirements for good risk communication are:

- 1 **Follow up** – When input is provided people want to know that it was used. It is respectful to provide follow up to contributors, and this has a positive effect on organisational reputation that will assist future engagement.
- 2 **Value different perceptions** – People develop ideas and impressions logically. Acknowledging alternative views on a risk and encouraging the expression of these perceptions may present ideas that can contribute to improving risk strategies as well as determining what misconceptions need to be addressed.
- 3 **Evaluate** – Make sure that two-way communication is taking place, and monitor its effectiveness. Evaluate in a way that can be learned from in the future.



## Building and Keeping Trust

*When science and society cross swords, it is often over the question of risk.*  
(House of Lords, 2000)

A primary purpose of risk communication is to convey information that will be clear, easily understood, and acted upon by those who have a stake in the management of risk. However, by its very nature, information on risk inevitably contains uncertainty.

A challenge for risk communicators is to explain the implications of uncertainty for a variety of stakeholders, without further complicating or over-simplifying the situation, which could result in misinterpretation and misunderstanding of the risks and lead to inappropriate risk management decisions.

In addition to the nature and clarity of the information that is being delivered, a critical factor that determines the effectiveness of risk communication is trust in those who are delivering the message. Poor risk communication can lead to a breakdown in trust, and a lack of trust can hamper any further attempts to communicate information on risk.

This section explores the significance that trust and credibility has on the way people perceive and respond to information on risk. In particular, it draws on experiences with environmental and health risks that have generated public controversies as a result of poor risk communication or distrust of those delivering the message. It concludes with some of the key lessons to be learned about the importance of building and maintaining trust to effectively communicate risk.

## The significance of trust, credibility and openness

*Sound health is the greatest of gifts; contentedness, the greatest of riches; trust, the greatest of qualities.* (The Buddha)

A dictionary definition of trust describes it as a firm belief in the reliability, honesty, veracity and justice of a person or thing. It is manifested in the way in which a person has confidence in another individual, organisation or system to behave honourably.

Trust has been described as “a psychological state comprising the willingness to accept vulnerability based upon positive expectations of the intentions or behaviour of another” (Rousseau *et al*, 1998). Establishing trust is reliant on risk and interdependence. Trust is established when there is a need for co-operation in overcoming

or improving a situation. Risk creates an opportunity for trust to develop, which leads to positive risk-taking. Trust would not be needed if actions could be undertaken with complete certainty and no risk. As risk awareness and social inter-connectivity increase, trust becomes an increasingly important social construct.

However, trust can be misplaced leading to negative consequences, as in the case of fraud. Trust is essential to organisational life. Social relationships of all types rely heavily on trust, and we depend on such relationships to collectively manage uncertain situations such as natural hazard events.

Placing trust in a person or organisation enables an individual to deal with uncertain situations in which there is reliance on others for their knowledge, expertise and willingness to act in the best interests of that individual. An example is the doctor-patient relationship, in which there is an imbalance of knowledge about the risks of an illness or its treatment. In the absence of trust in the doctor's advice there are high costs associated with the patient obtaining the information needed to make a choice of treatment, as well as the potentially high costs and risks of making the wrong choice.

Trust is fragile. It is easily destroyed and requires significant effort to build, rebuild and maintain. Some of the challenges include:

- Negative (trust-destroying) events are more noticeable and tend to influence risk perception more than positive (trust-building) events.
- Sources of bad (trust-destroying) news tend to be seen as more credible than sources of good news.
- Distrust, once initiated, tends to reinforce and perpetuate distrust (Slovic, 1999).

Negative responses to risks and a breakdown of trust arise where risks and benefits of an activity are not clear or are perceived as unfairly distributed. Prevailing popular opinions can also impact negatively on trust. For example, genetic modification of food evokes strong feelings of distrust towards the proponents of such technology because of concern about the uncertain, long-term environmental and health risks that outweigh any perceived benefits to society. On the other hand, biotechnology is generally accepted, and even valued and those involved trusted, when its application produces medical treatments that have widespread benefits for society (e.g. insulin used for the treatment of diabetes).

Trustworthiness, credibility and openness are essential qualities for effective risk communication. Studies have confirmed a strong correlation between the characteristics of trust and credibility and their influence on risk perceptions (Trumbo and McComas, 2003). Research indicates that people are more concerned about risks when they do not trust the people or systems that manage them (HM Treasury, 2005).

Others have described the key factors that determine trust and credibility as knowledge and expertise, openness and honesty, and concern and care (Peters *et al.*, 1997). Other determinants include competence, caring and empathy, dedica-



tion and commitment to due process and a desired goal, goodwill, and an absence of bias.

Trustworthiness is determined by the extent to which an audience perceives the assertions made by a communicator to be honest, and this determines whether or not the argument being presented is persuasive. Credibility is closely linked with knowledge and expertise that determine the extent to which a risk communicator is perceived capable of making factual assertions (Frewer & Miles, 2003).

Well-meaning but false assurances can destroy trust. The British Government's handling of concerns about BSE (bovine spongiform encephalopathy, or 'mad cow disease') and its transmissibility to humans led to a significant loss of trust in both the government and its advisers in the late 1980s and 1990s. A subsequent inquiry into the BSE incident concluded that the communication of the risk posed by BSE to humans was poorly managed:

*The increasing knowledge about BSE over the years, which threw doubt on the theory that it would behave like scrapie, was not concealed from the public. However, the public was not informed of any change in the perceived likelihood that BSE might be transmissible to humans. The public was repeatedly reassured that it was safe to eat beef. Some statements failed to explain that the views expressed were subject to proper observance of the precautionary measures which had been introduced to protect human health against the possibility that BSE might be transmissible. These statements conveyed the message not merely that beef was safe but that BSE was not transmissible. The impression thus given to the public that BSE was not transmissible to humans was a significant factor leading to the public feeling of betrayal when it was announced on 20 March 1996 that BSE was likely to have been transmitted to people.*

*(BSE Report, 2000)*

The BSE incident proved to be a turning point for the British Government's approach to the use of science in policy-making and improving public confidence in government's ability to make sound decisions. The lessons learned from the BSE crisis led to changes that saw more effort going into ensuring that advice to government is based on sound evidence, and that it is timely, robust and capable of standing up to challenges of credibility, reliability and objectivity.

Another case in Britain in the early 1990s highlighted poor quality decision-making and a breakdown in trust in the health care system. It involved failure by surgeons in the paediatric heart surgery at Bristol Infirmary to communicate accurate information on the level of risk to which babies undergoing surgery were being exposed.

An inquiry into the situation revealed a major failure of self-regulation with the development of a 'club culture' amongst senior professionals, which meant that

criticism and evidence of poor quality decision-making and preventable harm was disregarded. There was a breach of trust as people in the service failed to work together effectively for the interests of their patients.

The surgeons' failure to communicate the risks left the parents feeling that their consent was being falsely obtained (Alaszewski, 2002). A similar situation arose in New Zealand in the 1980s when the Cartwright Inquiry revealed that many women with major cervical abnormalities had been left untreated creating a major breakdown in trust in senior medical professionals due to unethical practices at National Women's Hospital. The inquiry sparked a reform of patients' rights in New Zealand (Women's Health Action Trust, 2007).

### **Uncertainty and trust – experts and laypeople**

Risk is something we deal with every time we take a decision that involves uncertainty (Eiser, 2004). Risk has two dimensions: the probability that some event will occur, and the nature and extent (or seriousness) of the consequences of that event if it does occur. There is usually uncertainty associated with both these dimensions, as well as uncertainty about the links between cause and effect.

Uncertainty is both a driver for researchers to find out more about a risk, and a source of tension between those who assess risks and those who are exposed to them. This reflects their different perspectives and behaviours. For example, scientists will be familiar with uncertainty and will regard it as a fundamental reason for the research that they undertake. On the other hand the public often seek certainty and assurances of safety and are less willing to accept risk and potential failure.

In the case of food risk uncertainty, Frewer *et al.* (2003) found that there is a marked difference between the experts' and the public's conceptualisation of how people will respond to information about scientific uncertainty. Experts appear to believe that risk communication incorporating information about uncertainty will have a negative impact on public risk perceptions.

In contrast, the ability of the public to conceptualise uncertainty appears not to be an issue – they want much of the information on the scientific analysis to be made available. It is the denial by experts of risk uncertainty that drives the public's distrust in science and scientific institutions. This has an important bearing on how risk is communicated to different audiences.

One of the biggest challenges for risk communicators is that of presenting uncertainty in a way that removes, rather than creates, confusion and conflict. Uncertainty is inherent in risk assessment and must, therefore, be part of the accurate communication of risk.

Science typically lies at the centre of political controversy and debate about risk,

where those who advocate some line of action are likely to claim a scientific justification for their position, while those opposing the action will either invoke scientific uncertainty or competing scientific results to support their opposition (Sarewitz, 2004).

Those who wish to either exaggerate or downplay risks can use uncertainty to do so. Manipulation of uncertainty by powerful interest groups, as happened in the case of the tobacco industry's strategy to create uncertainty about the links between smoking and ill-health, has been used successfully to delay or block decisions.

A similar approach can be seen in the debate over climate change. Despite the overwhelming scientific evidence of global warming and its causes, some politically motivated groups have attempted to manipulate or distort scientific information to show uncertainties where none actually exist.

Research into what the New Zealand public knows, thinks, and feels about science found that a majority of New Zealanders are interested in at least some aspects of science and technology, and are most interested in those areas where personal and societal benefits are most evident (Hipkins *et al.*, 2002). Some of

#### **Case Study – The Manipulation of Uncertainty**

In March 2004 the Union of Concerned Scientists (UCS) in the USA released a report detailing examples of the distortion of scientific-based information and the manipulation of documents to give the impression of considerable uncertainty about climate change (UCS, 2004).

In a case detailed in the UCS report, the Bush administration was found to have attempted to 'substantially alter' (p5) a section on climate change in a US Environmental Protection Agency (USEPA) draft Report on the Environment (USEPA, 2003). The White House Council on Environmental Quality and the Office of Management and Budget are reported to have demanded alterations to the USEPA document and the inclusion of "so many qualifying words such as 'potentially' and 'may'" that the result would have been to insert "uncertainty...where there is essentially none" (p6). Rather than comply with these demands, the entire section on climate change was deleted from the USEPA report prior to its release for public comment; "agency staff chose this path rather than compromising their credibility by misrepresenting the scientific consensus" (p6).

This example highlights the vulnerability of scientific uncertainty to being overplayed or underplayed in order to attain political advantage. Such manipulation has serious implications for the public and decision makers' access to "rigorous, objective scientific research and analysis" (p42) in order to make informed risk management decisions (PCE, 2004).

the relevant findings of the study included:

- New Zealanders are not inclined to take scientific claims on trust. They are likely to judge research as irrelevant or unconvincing if they do not understand the research methods and/or the meaning of evidence is not immediately apparent.
- People recognise that new developments in science and technology are important to New Zealand's economy. However, there is concern about the consequences of new developments in science and technology, which may be partly related to personal values positions.
- There appears to be a high level of awareness about past dishonesties in science internationally, particularly in relation to such things as the reporting of health effects of smoking. Public relations approaches to socio-scientific issues are treated with suspicion.
- Openness about uncertainty is seen as evidence of honesty on the part of scientists. Open acknowledgement of areas of uncertainty and new questions are preferable to bland assurances of safety or predictability.
- Health and environmental issues are both areas of high interest to New Zealanders. Some see a role for the government in funding basic research, and for government control over scientists and their accountability to the public.
- People are discriminating of the sources of scientific information they will trust. Professionals are trusted above all media sources. Politicians and lobby groups are the least trusted sources of information about science issues.

A study by Johnson and Slovic (1995) into the effect of uncertainty on risk perception and trust concluded that prior trust or distrust in government, and public attitudes towards authority, are dominant factors in the public's perception of risk, more so than uncertainty. Authorities' discussion of uncertainty in their risk estimates may be regarded by some as a sign of honesty, and by others as a sign of incompetence.

The distinction depends on people's familiarity with uncertainty in risk assessment, and in science generally, as well as their prior experience of the authority's trustworthiness. The study emphasised that it is wrong to assume that 'educating' citizens on scientific uncertainty will be simple, or that explaining uncertainties will improve public trust or knowledge.

In another study examining the views of scientific experts on how the public conceptualise uncertainty (Frewer *et al*, 2003), many scientists thought that providing the public with information about uncertainty would increase distrust in science and scientific institutions, as well as cause panic and confusion regarding the extent and impact of a particular hazard.

This is consistent with the 'deficit model' of communicating with the general public which seeks to 'rectify' the knowledge gap between those who have the expertise in risk and those non-experts who are the recipients of the information. In the deficit model of communication the difference in cognition and under-

standing between expert and audience is regarded as a deficit on the part of the audience, which could be corrected by the provision of more information from the experts.

This is based on the assumption that, if only the information could be presented in a simple and understandable way, the public could be 'educated' to accept risks that they regard as unacceptable. The deficit model explains those situations where there are fundamental differences and a polarisation of views between expert elites and the general public. Any attempts to 'dumb down' risk information in such situations can lead to further distrust and controversy.

### **Case Study – Risk Communication and Dialogue**

Risk communication is increasingly relied on to resolve conflicts around technological risks. The genetic engineering debate in New Zealand, and elsewhere, has demonstrated the potential for major public conflict in the relationship between science and society.

In 2002, the Ministry of Research, Science and Society (MORST) established a Dialogue Fund to “develop pilot programmes that engage communities in discussion over science and technology related issues that are, or may become, a cause of tension between science and society; and to build improved relationships between scientists and the community based on two-way communication.”

Victoria University of Wellington (VUW) was funded to trial three new dialogue approaches using the genetic engineering (GE) debate as a case study. The research assumed that, even though the discussion was difficult, there were still opportunities to progress the debate on GE. While total agreement may not be possible, it was suggested there was potential for greater consensus than has been achieved to date and for enhanced policy outcomes. Participants were recruited from two stakeholder groups:

- 1 Scientists working on genetic modification in the laboratory or as science managers/marketers.
- 2 Members of community interest groups with concerns about the environment, Maori issues, trade and development, health, sustainable agriculture or spiritual values.

The social discourse on GE is often constructed as a conflict between 'science' and 'society', with homogeneous values and expectations within each sector, and a wide divide between the two. It is often characterised in polemical terms as:

- Rationality versus Emotion.
- Facts versus Fears.
- Experts versus Public.

- Progress versus Obstruction.

Our project set out to explore what lies behind these apparently intractable public positions, to develop approaches for reaching across the divide, and to establish areas of commonality and opportunities for ongoing engagement and exchange. It involved participants in an interactive process, testing selected communication techniques in facilitated workshops.

Our first method, Appreciative Inquiry, has been used in organisational development to enhance relationships between groups that want to work together more effectively. It puts the focus on solutions rather than problems, and invites participants to consider what has worked well in the past in their relationships and take that into the future. The second approach, termed The Civil Conversation, applies approaches from interpersonal conflict resolution to conflict around issues in the public domain. Protagonists are brought together to explore values and perspectives around controversial public issues. The method was developed in New Zealand by Rhonda Pritchard.

The final approach, Issues Mapping, was developed using the 'mental models' concept developed by Morgan *et al* (2002) in risk communication. Traditional risk communication was based on a deficit model, in which the risk 'perceptions' of the public were compared with the 'actual' risks identified by experts. The challenge was to close the gap between public fears and the technical facts, through the use of communication techniques. Issues Mapping assumes that all stakeholders frame risk based on the social construction of the issues and their role in the discussion; and that the communication task is to establish a process that elucidates and enhances a multilateral conversation around all the elements of risk that may be identified.

We created a representation of the issues from the point of view of the 'lay public' and then developed a similar representation from 'the experts'. The framing of scientists and the community about GE risks was presented graphically and fed back to workshop participants as an aid to discussion. We used a graphic scale to show the ranges of acceptance among participants of different forms and uses of GM; and modelled a 'landscape' of the issues in terms of how central or peripheral they were to where participants stood in the debate.

All three methods involve a face-to-face conversation between participants representing different points of view. The key elements of the process included:

- Small group discussions in a structured setting.
- Use of an expert facilitator.
- Establishing rules for the conversation, including confidentiality and respect.

- Use of active skills in asking questions and listening.
- A focus on dialogue rather than debate – on exploration of a range of world views, rather than the imposition of a single, ‘correct’ position.
- A search for common ground rather than a focus on differences.

This was only a pilot project, conducted in a limited time span with just one session. We nevertheless found that considerable progress could be made in moving the discourse from debate and into dialogue.

Participants were able to identify considerable common ground and found that a dialogue setting allowed them to move out of the entrenched positions they normally occupied in the public domain. For example, there was a clear overlap in the acceptability of different levels of containment for genetically modified organisms.

They also indicated a strong preference for using these forms of communication in the future.

Our report (Cronin, 2005) presents detailed information on the social, economic, cultural and environmental risks of GM as perceived by the various participants, and on their experience of communication around the topic of GM.

Our key findings were:

- The debate is not as polarized as depicted by the media.
- Traditional stereotypes do not apply.
- Both groups place a high priority on the environment.
- They differ over the importance of ethical and spiritual issues.
- There is a common mistrust of the ‘profit motive’ in modern science.
- Both scientists and community interest group members want better forms of dialogue, and more information from each other and from the government.

*Karen Cronin*

### **In whom do we trust?**

Various studies have examined the institutions or individuals that people trust most. Trumbo & McConas (2003) report that people typically perceive physicians, friends and environmental groups as the most credible sources of information.

A United Kingdom Parliamentary report (House of Lords, 2000) refers to a number of quantitative and qualitative surveys carried out there. In one survey, respondents were asked which among a range of scientists they would have the most confidence in to tell them the truth about BSE and the safety of nuclear power stations. In both cases the rank order by popularity of first choice was:

- 1 a scientist working in a university;
- 2 a scientist working in industry;
- 3 a scientist working in a non-government institution; and
- 4 (last) a scientist working in a government department.

Another survey of public attitudes to risk suggests that government scientists enjoy less trust than independent scientists or pressure groups, but more than private companies or government ministers (House of Lords, 2000).

As a note of caution in interpreting such surveys, terms such as 'risk' and 'trust' may mean different things to different people and in different contexts. For example, the term 'we trust you' may mean a number of things, including:

- we believe you can give us the right answers and reliable information;
- we believe that you are honest, and will tell us all you know;
- we trust your judgement and rely on you for decisions which are wise, impartial, ethical and in the public interest; or
- we may trust you in one of these ways, without trusting you in the others. (House of Lords, 2000)

The culture of secrecy within public and private organisations has a significant effect on trust, particularly on issues of risk involving novel science and research, and a lot of uncertainty, assumptions, complexity and disagreement around the risks. In contrast, trust is built up through efforts to inform, and attempts to understand people's attitudes, values and ethics through dialogue.

A study of the role of trust in information sources in risk communication (Frewer & Miles, 2003) examined whether, in the case of food scares, trust differs between different sources of information. The study surveyed over 200 people and found that, in relation to food risks, medical sources were more trusted than government sources, and that industry sources were least trusted to convey information about risks to the public. This was thought to be due to a number of food scares in the mid- to late-1990s.

### **Key lessons about the role of trust in risk communication**

*Public trust can only be established if communications about risk are frank and objective [and] in particular, there must be openness about uncertainty.* (Lord Phillips, in Report on BSE, 2000)

Various studies and examples highlighted above present evidence that trust is essential to effectively communicate information on risks and to influence decisions to act upon such information. Trust encourages co-operative behaviour, reduces harmful conflict, decreases transaction costs and promotes effective responses to crises.

The lessons about building and maintaining trust to be an effective risk commu-



### Case Study – Defying the Negative Stereotype

Surveys in the USA have shown a long-term decline in public confidence and trust in social institutions, especially government and industry. Corresponding to this decline in institutional credibility has been the rise of citizen environmental groups. A study of critical factors affecting public perceptions of trust and credibility for three different sectors – citizen groups, industry and government – found that defying a negative stereotype is key to improving perceptions of trust and credibility. In the case of citizen groups, they were perceived to lack specialised knowledge and expertise. To address this negative stereotypical image and improve perceptions of trust and credibility, these groups were advised to improve their *knowledge and expertise* capabilities. Similarly, industry is perceived to care only about profits, and needs to address this by improving the public perception of its *concern and care* about risk issues. In the case of government, the focus should be on improving the public perception of its *commitment* to managing risk (Peters *et al.*, 1997).

nicator can be summarised as follows:

- It is important to plan ahead, identify the issues and engage with stakeholders (interested or affected parties) as early as possible. Stakeholders will want to be, and should be, involved in the decision-making process and to share their concerns and ideas. Early stakeholder engagement also identifies where the current evidence base is weak and should be strengthened by investment in further research.
- Risk is about uncertainty and incomplete information. Under these circumstances it is important to get a wide range of advice from the best sources. Uncertainty is not the same as incompetence. Where there are uncertainties they should always be acknowledged and attempts made to better understand and reduce them.
- Official admissions of uncertainty can be more favourably received and trusted by the public than efforts to deny risks exist. Uncertainty should be explicitly identified and communicated directly in plain language. The difficulties associated with presenting uncertain, incomplete or conflicting conclusions should not be underestimated. However, suppressing uncertainty is more likely to lead to a significant loss of public trust and respect.
- Stakeholders should be provided with as much information as possible. In doing so, stakeholders should be asked what information they need and how they wish to be informed. Attempts to filter out apparently complex information or to over-simplify it should be avoided.
- People and organisations will respond differently to advice they receive about risk. Their responses to risk will largely depend on the trust they place on those who communicate risk information. Sometimes the issues which experts regard as vital may not always be the ones that most concern the public. Effective engagement on risks between experts, the public and decision mak-

ers requires a free flow of meaningful information, a commitment to understanding others' points of view, and a willingness to seek realistic risk management solutions.

- While trust is important in risk communication, it is not a substitute for critical analysis of risks and how they should be managed. Trusting too much (over-trust), or misplaced trust can be dangerous and exacerbate inappropriate behaviour.
- Risk assessments presented to decision makers should include scientific evidence as well as information on differing perspectives of risk (including public perception of the risk). Values are also important to consider. All such material should be freely available to all stakeholders. Procedures for obtaining advice should be open and transparent.
- Risk experts should not be pressed to come to firm conclusions that cannot be justified by the evidence available. It is important to distinguish between the responsibility of experts to provide advice, and the responsibility of decision makers for actions taken as a result of that advice.

In general, the decisions we take on risks are based on the information that we receive, the status of the person who gives us the information, our previous experience of the issue, and what our expectations are. When information is incomplete we rely on the opinions of others in whom we trust. We trust people

#### **Case Study – Eradication of an Insect and an Erosion of Trust**

In 2002 the Ministry of Agriculture and Forestry (MAF) carried out the aerial application of Foray 48B over western Auckland in an effort to eradicate the painted apple moth, which posed a major threat to commercial forestry and native trees. Foray 48B is a commercial insecticide that contains *Bacillus thuringiensis* (Bt) as its active ingredient.

Although Foray 48B is considered generally to be safe to use, independent health risk assessments of the insecticide prior to its use by MAF identified potential effects such as short-term irritation and worsening of pre-existing conditions such as allergies and asthma. A later study of the literature indicated that Bt products have the potential to cause health impacts in sensitive individuals (Hales *et al*, 2004).

The aerial application method created concern among residents about the consultation process leading up to the decision to spray as well as the potential health risks of the insecticide.

Delays by MAF in deciding what course of action to take following discovery of the moth led to hostility and suspicion towards MAF by the time it had announced that a spray programme was necessary. People in the community expected to be consulted but initially they were poorly informed. MAF's initial response to residents' concerns was to downplay any likely danger to health from the spray.

During the spray programme MAF set up a health monitoring and advisory service to deal with any health-related concerns. But this did little to allay concerns. Residents were suspicious, expressed little confidence in the effectiveness, impartiality and fairness of such a service, and many were reluctant to use it.

An article by a local councillor who examined the lessons learned from the communication between MAF and the community made the following observation:

*It is a mistake to think that the community could not understand complex scientific information, and things are 'dumbed down' to the point of being useless. Most community members who are interested in an issue will digest huge quantities of information. The last thing anyone wants to hear is, "trust us – we know what is good for you". That sets off immediate alarm bells. Quality information and well-informed community leaders can help break down today's mistrust of scientists. People want to know where to go for truly independent health advice. (Hulse, 2005, p6)*

This case highlights a situation in which health effects linked to the spraying programme were difficult to prove, and despite all the assurances about the safety of the spray and the establishment of a health advisory service there remained a lack of trust in those who were communicating the information on risk. This was due partly to distrust of a government agency whose primary responsibility was to ensure the eradication a forest pest, and partly to residents' indignation at not having any real choice about the situation and believing that their concerns were not respected.

*With wisdom, patience and respect from the beginning, trust can be earned. True partnership with the community can only exist with this trust. When a spray programme is necessary it must be conducted in partnership with the community involved – otherwise it becomes a war! (Hulse, 2005, p7)*

we know well and who share our views.

We are less likely to trust people we do not know or those who seem to have conflicts of interest. The key to successful information flows is therefore trust. However, trust is fragile and is easily destroyed if those who are communicating the information are considered to be unreliable, or are perceived to lack knowledge and expertise, openness and honesty, concern and care, and a commitment to addressing the risk.

## **Informing and Empowering**

New Zealanders live in a country at risk from natural disasters. Fortunately we can educate people about the actions they can take to ameliorate the effects of these disasters. In an ideal world, having learned what they can do about minimising the consequences of natural disasters, all households in New Zealand will secure their homes, put together a survival kit and develop a disaster plan for their family. If only it were that straightforward.

Natural disaster risk communicators (at least those who wish to encourage people to take steps to prepare for such events) often tread a fine line between generating fear and indifference, both of which can lead to inaction. And of course there is no guarantee that steering a middle course will deliver the desired results either.

One of New Zealand's primary resources for natural disaster risk communication is the Earthquake commission (EQC). EQC provides advice to New Zealanders on natural hazard protection and insurance to residential property owners for damage caused by a variety of natural hazards. EQC is a crown entity that was established in 1945. One of EQC's roles, as set out in its legislation, is to facilitate research and education about matters relevant to natural disaster damage and its mitigation.

While EQC provides insurance for damage caused by earthquakes, landslips, tsunamis, hydrothermal activity and volcanic eruptions, its public education activity has concentrated largely on earthquakes. This is because they are frequent, have the potential to cause widespread damage and homeowners can do many things themselves to reduce or prevent quake damage to their property. Of course if they have home and contents insurance, people will have EQC cover, but no amount of insurance will make up for the inconvenience of broken appliances or the heartbreak of broken heirlooms.

In its research, EQC has found that people's interpretation of risk messages influences whether or not they take action to mitigate the risk, although interpretation of risk is by no means the only factor that comes into the decision-making process. This is not rocket science, but it still presents a significant challenge.

One interpretation of risk is that the probability is too remote to warrant taking any action to mitigate against damage. A second is espoused by those people who don't deny the odds, but assume that the damage will be so catastrophic that there's not much point in doing anything to mitigate. Quite often they would prefer not to think about it.

There are of course many people who fall somewhere between the two extremes, who agree that the risk is there and that there are things they ought to do to mitigate it. However, there are a number of reasons why mitigation is never ticked off the 'To Do' list; for example, there are always other things that need doing first or it is difficult to find out exactly what to do and to do it, or it is too expensive.

Consequently, it is never a matter of just educating people about the risk and the mitigation measures they can take. The messages must also aim to counter one or more of the barriers to action.

From the latter half of the 1990s the EQC's public education programme has incorporated a range of media and approaches in order to ensure the messages cut through to as many people as possible and help overcome some of the barriers.

The language EQC uses to convey a message, whether about risk or mitigation, aims to be simple and concise. Since one of the barriers to taking action is that it's too difficult to do, it is crucial that its education material is easy to understand. To draw on a cliché, a picture is worth a thousand words. So when EQC provides information on how to quake safe a home and its contents, it usually includes images. In television advertising in particular, this can prove a difficult idea to impress upon the 'creatives' who may object to the inclusion of prosaic scenes with Blu Tack (a malleable, reusable non-marking adhesive). However, the purpose of the exercise is to educate, not to create the perfect advertisement.

To show that the risk of natural disaster damage is real, EQC has used:

- 1 Television advertisements showing a banner running across the landscape, metaphorically bringing the underlying faults to the surface – it is all too easy to ignore the fact that our lives are played out on the constantly moving boundary of two tectonic plates.
- 2 Television advertisements showing that the risk of experiencing a damage-causing quake is as great or greater than other risks that we routinely mitigate against such as burglary or car accidents.
- 3 Brochures showing how likely a damage-causing quake is in different areas of the country.
- 4 Television and newspaper advertising illustrating the risk natural disasters pose to family and precious possessions.
- 5 School resource kits which target children, who in turn discuss with their parents what needs to be done at home.
- 6 Display stands that can be sent throughout the country and at times when local awareness is high, e.g. during Safety Week or the Hawke's Bay earthquake anniversary.

To communicate that while the risk is real, it can and should be managed, EQC has employed:

- 1 Television advertisements providing simple advice on how to mitigate e.g. 'Fix. Fasten. Forget.' commercials.
- 2 School resource kits.
- 3 EQ-IQ website which has more detailed information than generally can be included in advertising material.
- 4 'Quake Safe' brochures delivered to every household from Hamilton southwards.

5 Display stands.



*EQC's most recent television commercials show a banner running across the landscape, metaphorically bringing the underlying faults to the surface.*

### **Empowering new migrant Chinese**

The good sense of providing material on risk and risk management in the first language of people and in ways that suit their culture is obvious, but what is less obvious is that the message itself may need to be specially designed as well.

A good case in point is communicating with new migrant Chinese in New Zealand. Of the well over 100,000 ethnic Chinese in New Zealand, more than 80,000 were born overseas and the vast majority of these are relatively recent migrants to New Zealand. Most speak one of the Chinese dialects as their first language and may not have a very good grasp of spoken English, let alone written English.

Although they may speak a different dialect, ethnic Chinese typically read in the same traditional Chinese script. It follows that it makes sense to communicate with this group in written form, i.e. in Chinese script. However, what about the message itself? Is it just a matter of translating the messages used for the majority of New Zealanders?

Through community feedback EQC realised that the overall approach to take was one of reassurance. These were not people who needed to be jolted out of their complacency. They were already sensitised to the general risk; they just wanted to know what decisions they could make to lessen or negate it.

One of the first things Chinese migrants typically want to do when they arrive is buy a home. However, they are likely to have heard that New Zealand is prone to earthquakes and other natural disasters and they want to make sure that they buy a safe place in a safe area.

The first imperative then was to explain that while natural disasters are a feature

of life in New Zealand because of its geologically active nature, people have learnt to live with them.

The second imperative was to explain that New Zealand has good systems in place to ensure that houses are not likely to be permitted in high-risk zones and that the houses are built to standards that take natural disasters into account. It was explained how building standards had improved over the years.

The new migrant Chinese needed to be reassured that they could trust the system. It was therefore not a matter so much for them to work out what were the safe areas and what was a safe type of house, but to be reassured that they could, with some prudence, buy just about anywhere.

EQC advised that there were various services available to help prospective buyers make their decisions – for example, city and district councils through the provision of Land Information Memoranda (LIMs), property lawyers, and accredited building advisers. EQC also advised that there were systems and services in place when disasters did occur including Civil Defence and EQC itself.

To do this, EQC has produced a range of material (a brochure, website material, press advertisements and articles) in Chinese that outlines the risks people living in New Zealand face, how risk is managed by society (e.g. EQC's insurance) and what people can do themselves to mitigate the risk to their property.

Knowledge is indeed power. Knowledge enables people to act with confidence, based on the understanding that they have been well-informed and have the facts before them. EQC's programme for the new migrant Chinese community was designed to do exactly that on the particular subject of property and natural disaster in New Zealand.

Establishing trust and providing education are core tools in evolving risk communication. New Zealanders are fortunate that with our high exposure to natural hazards, research into understanding, predicting and mitigating risks is highly advanced. Councils and infrastructure owners have a wealth of tools available to manage these risks.

Additionally they have obligations that require them to manage their risk exposure. Conversely, at a community level, familiarity with minor natural hazard events often leads to complacency among populations that are exposed to some of these risks. Multiple small events that have been experienced with little problem are more prevalent than larger less frequent events that require preparation and mitigation.

Many New Zealanders have experienced or know people who have experienced natural hazard events. Trust in past experiences, expectations from government entities and 'common sense' all contribute to the way messages on preparation and mitigation are received by the public. Similarly, organisations with access to technical risk data may have quite different expectations from the public. Risk





*EQC's 'Easy Ways to Quake Safe your Home' brochure has been translated into Chinese and is available on EQC's website ([www.eqc.govt.nz](http://www.eqc.govt.nz))*

communication provides a means of better aligning the expectations of organisations and the public, but in order to get appropriate action the message environment must be right.

It is essential for risk practitioners to establish the level of understanding and misconceptions that are present. This will shape what the various stakeholders consider reasonable for them and others to do. Councils around the country continue to work with their communities in order to raise risk awareness and to understand what their communities expectations are.

#### **Case Study – Eastern Bay of Plenty Floods 2004**

Flooding in Eastern Bay of Plenty in July 2004 impacted on much of the Rangitaiki Plains and parts of the Whakatane Township. In total 2,552 people became evacuees during the emergency, over 500 homes were damaged and some 450 farms and lifestyle blocks were affected.

A CAE risk communication case study following the floods explored the appreciation of the risks and effectiveness of flooding risk communication in the area.

Early in the study the various stakeholders and their risk communication relationships were identified. These were expressed as follows (see Figure 3.1):

- The top tier boxes represent 'Exposure Stakeholder' – those exposed to flooding risks and how these risks affect them.



- The bottom tier boxes represent ‘Activity Stakeholder’ – those organisations that undertake some action with regards to the risk and in what phases they **most actively** engage in risk communication with the risk exposed.
- The middle tier boxes represent both information sources and organisations that act as a medium for risk communication between the exposure and activity stakeholders or alternatively as sources of information relayed to those exposed to the risks.

The key stakeholder groups identified were loosely classified as ‘Residents’, and ‘Local Government’. These were identified as the stakeholders that had the greatest interest in communicating needs and desires about flood management to each other on a daily basis. Following identification of key stakeholders a series of surveys were conducted to draw out risk perceptions, understanding and how these stakeholders communicate about flooding risks.

Prior to the floods the various district councils communicated hazard information to the public as part of their newsletters and websites. In addition, efforts to engage face-to-face with members of the community at events was also undertaken, including through regular river scheme meetings.

During the flood response the local government attitude was one of informa-

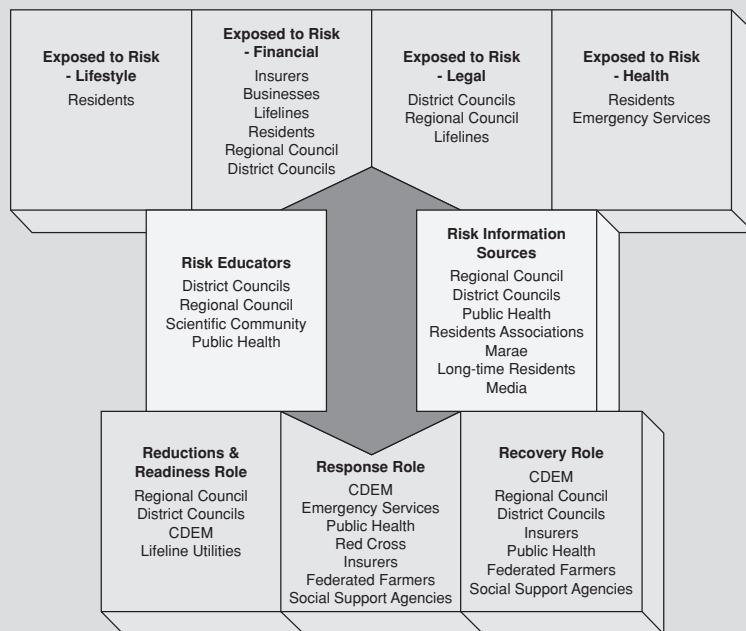


Figure 3.1: EBOP Flood Risk Stakeholders

tion dissemination. The use of fliers was initiated by local government in order to share information and advise specific communities. Normal means of dissemination (New Zealand Post) proved unviable for conveying targeted information to specific areas of the community. The result was that local volunteers distributed the fliers and the information was also relayed through 1XX transmissions.

Two way public communication was managed predominantly by the local radio station 1XX, which they have received recognition for. The police recommended to people that contacted them to contact 1XX with information and to get updates on the situation from the radio station. People were able to call into the radio station with situational information and the like and this information was then transmitted to all those listening. 1XX operated as a call centre with three receptionists fielding calls 24 hours per day for the duration of the flooding. This resource provided real-time updates on events and public warnings additional to those that were issued by the CDEM Controller through the Public Information Manager.

Overall, residents were satisfied with local government performance and communication. Some were not satisfied with the timeliness of specific action but appreciated the reasoning behind delayed decisions. Additionally, residents were satisfied with their own understanding and level of preparedness for flooding. Minimal changes to their levels of personal preparation for emergencies have been made since the floods.

In contrast to residents' opinions, local government believed that the communities were neither well prepared nor able to respond well to flooding events. Primarily a lack of personal home preparedness was cited. This stark contrast of these views with respect to flooding risks shows that there is still work to be done on improving risk communication in this area.

*Adapted from Hoskin (2006a)*

## Developing a Strategy

Risk communication strategies may have to do with questions of efficiency – how can we communicate so as to give us the greatest possible chance of achieving our objectives? – and also with positioning the organisation. For example, when risk management and communication is the focus, a strategy may aim to optimise compliance with procedures that are designed to minimise the potential for an identified risk to be realised. Such an occurrence could damage the organisation's interests and so limit its ability to fulfil its mission.

If crisis communication is the concern, a strategy may have to do with how the organisation can confront this challenge so that it achieves a pre-determined goal. This, for example, may include being seen by important audiences as a company that is prepared to put customers' well-being ahead of its own when their health has been compromised.

Leaders know that “a crisis is a risk manifested” (Heath, 2006) and that crises and risks must be covered by appropriate strategies.

Strategies vary greatly. Some are very precisely defined and imposed top-down through organisational hierarchies. Others emerge in a more evolutionary and co-operative way from discussions, experiments and learning. In either case, taking a strategic approach should ensure that decisions on strategic direction, and communication design and delivery are seen as an end-to-end process of change management, with constant testing, feedback, learning and improvement. All strategies need to be adaptable, with quick feedback and effective information flows to respond to new information, and to take account of changing circumstances or unexpected events.

Strategies are not the same as tactics, which are the specific actions one takes in support of strategy implementation. For example, if an internal risk management strategy calls for face-to-face communication because it is considered this approach will work best, tactics will be personal briefings or small team meetings, usually led by team members' immediate supervisor or manager.

In contrast, a strategy needs to have a vision of a desired future. Strategies explain *why* particular steps are taken. In implementing an action plan, it is important to ensure that these actions remain 'strategic' – that is, that they continue to contribute to achieving the desired outcome.

Sustaining strategic confidence may be a matter of funding ongoing research to

enable risk communicators to make adjustments as they go, adapting to the findings. For example, if research shows that one message approach is working better than another, communicators can either make adjustments or drop the less productive message design.

The key is flexibility, although this is easier to prescribe than to demonstrate. Sometimes organisational ‘silos’ – internal structures, workflows, policies and procedures – stand in the way of optimal adaptability to changing circumstances.

However, the ability to adjust is an essential component of strategy. Scholars of organisational strategic planning identify two key ways that organisations develop strategy. One is through formal processes, often (in larger organisations) led by staff members responsible for the annual strategic plan, which becomes a document presented to the board for signoff.

The other way, and one that recognises the uncertainty associated with seeking to manage risk, is through the pattern of responses an organisation makes as it responds to internal and external changes.

If an organisation has developed a strategic framework within which these responses can be made, it has a better chance of achieving goals than one that is trying to make circumstances conform to its predetermined plan.

For example, in a crisis, a determination to be seen as putting people first becomes a strategic framework within which decisions can be made. If a particular action is recommended, such as closing a factory after a fire and laying off staff until repairs can be made, the strategic framework becomes a litmus test: will such a step lead to us being viewed as we would wish to be seen by our publics?

### **Use of message maps**

Vincent Covello, of the US Center for Risk Communication, developed a technique that helps ensure that organisational messaging remains strategic. He originated the use of ‘message maps’ – visual aids that give at a glance the organisation’s messages in relation to high concern or controversial issues. Such at-a-glance accessibility can be important not only in managing risks, but also when a crisis occurs.

Using a message map helps to control most communication situations by helping to know what to say while reaching the audience with what they want, or need, to hear in an honest, straightforward manner.

The idea aims to display complex information in detailed, hierarchically organised responses to questions or concerns the organisation expects to arise. The responses are ranked according to their significance using an ‘inverted pyramid’ of importance. Message maps help develop a group of consistent messages and ensure that the messages are transmitted with a single voice.

Messages are laid out in a matrix and the process of developing them is considered as important as the finished product, as it helps mesh different sets of expertise, knowledge and opinion into a form that is easy to use consistently.

According to Covello, it is important in writing message maps to think of answers to possible questions from the perspectives of the publics that may be asking them, rather than from that of the organisation that is providing the responses. He suggests message maps should be based on three short sentences that convey three key messages in only 27 words. Ideally they will be memorable too.

Message maps can be used as a checklist to ensure all relevant messages have been identified and crafted in a form that will be understood easily. Often the lack of information in a message map is an early pointer to the lack of information in the message itself, so the process of developing the map offers opportunities to rectify any gaps in the information over time. They are also a useful tool for spokespeople media training, helping concentrate on the key issues and outlining any supporting material.

Covello says that message maps should not be regarded as fixed once they have been developed. Rather, they should be adjusted as new information becomes available. While message maps will help ensure consistent messaging, keeping them fresh is vital: reporters may come up with angles the organisation has not anticipated, despite its best efforts (see Table 4.1).

### **A consistent message**

Maintaining message consistency can be a challenge. One of the authors tried to ensure consistency when managing a crisis that occurred when a utility work crew cut a major cable. However he was desk-bound as his phone rang non-stop: the local newspaper went to the pit where the crew was working, and got a story directly, undermining corporate control efforts.

The same challenge can arise when a blogger with inside sources posts material that contradicts the official version of how a risk is being handled or a crisis managed.

Consistency is valuable, because when people hear about or read about the organisation either via the mass media or in their social networks, they are likely to recall the most recent information or opinion they received.

An organisational message sustained in a stable way over time is more likely to be remembered. Sometimes, the message needs to be not only that of the organisation in the eye of a media storm, but also that of the sector to which the organisation belongs. If a major risk event has occurred, it can undermine trust in an entire industry, not just the company most directly involved. In this case, the company needs help and can partner with peers, even competitors, in the longer-term interests of the sector.

<b>Key message 1</b> Our engineers have been monitoring the area for the past five years and say the risk is slight.	<b>Key message 2</b> This does not mean we think the risk is zero, so after the recent rains we have been monitoring the area continuously.	<b>Key message 3</b> We believe that our precautions will allow us to detect any significant movement in enough time to act.
<b>Supporting fact 1.1</b> We now have enough data to be able to make sound predictions as to the likelihood of any movement after heavy rain.	<b>Supporting fact 2.1</b> Our sensitive instruments are being backed up by regular site inspections.	<b>Supporting fact 3.1</b> We believe that the combination of steps we have taken will allow us to act in good time if the unlikely event of a subsidence does occur.
<b>Supporting fact 1.2</b> ...	<b>Supporting fact 2.2</b> ...	<b>Supporting fact 3.2</b> ...
<b>Supporting fact 1.3</b> ...	<b>Supporting fact 2.3</b> ...	<b>Supporting fact 3.3</b> ...

*Based on Covello, 2002*

*Table 4.1: Stakeholder Question or Concern: Possibility of land subsidence after unusually heavy rain*

Industry associations or sector groups may be able to play a co-ordinating role, but only if they have planned to do so beforehand – and have, ideally, engaged group members in simulation exercises. Both the company concerned and its partners need to have invested time in building up credibility in the eyes of those whose good opinion is important to their success.

This means more than ensuring that corporate actions are seen to be consistent with corporate messages, important though this is. It means especially that the organisation itself is seen as a legitimate part of the community, one that makes a valued contribution. If the organisation's own legitimacy is in question, it will face great difficulty in recovering from a risk event, particularly if the public suspects that negligence is involved. For example, a chemical company that has not invested in strong community outreach programmes may find itself facing calls for greater regulatory oversight of its operations or even closure if an unplanned release of toxic substances occurs.

In responding to such challenges, an organisation under fire needs to work with some established ground rules as it responds, together with other industry participants, to criticism from a risk-concerned public.

Communication needs to be as open as reasonable commercial confidentiality considerations will allow, and channelled through agreed spokespeople who work to common media release protocols. These protocols might cover not only what can be said but also what the parties have agreed cannot be said – at least without clearance from regulatory or legal sources.

There should be consultation and brainstorming about how complex, scientific

material can best be communicated to people who may have little appetite for information scientists consider important. They may simply be looking for a 'bottom line' reassurance that they face little or no danger.

Timing questions should also be agreed: how often will the parties release information, over what period? These are media relations strategy questions that demand co-ordination and co-operation: no easy task when all parties may be under intense scrutiny, even as they confront a major operational or naturally caused crisis.

## **Presenting the Message**

### **Empathy**

The definition of empathy 'is the ability to empathise', which is understanding and sharing the feelings of others, a cornerstone of being able to present an effective message, knowing and acknowledging your audience. Basically people want to know you care before they will care what you know.

The use of empathy in presenting a message can have both positive and negative outcomes. Empathy can lead towards the beginnings of a good working relationship, often leaving people feeling as though they are valued and that their message is received.

The risk associated with empathy may be that more time is spent on preparing an inclusive message than on presenting the whole message.

#### *Risk or hazards associated with empathy*

When using empathy as a tool to present a message it is essential to consider the potential for:

- becoming confused with the endorsement of a particular subject within your presentation;
- forgetting what to say because you focus on what the other party is saying; and/or
- working out how long to invest in communicating with some people, if you identify that they do not respond to empathy or this approach.

These potential problems could affect the effectiveness of delivering the message and must be recognised when developing a presentation strategy.

#### *Positives of empathy within your presentation*

If used correctly, empathy can help with the delivery of key points within a presentation, often leaving the audience supportive and understanding of the organisational message.

A positive outcome can be a higher level of organisational understanding of the

audience concerns, which can shape and influence future presentations, organisational support and direction – “Empathic acknowledging can satisfy people’s needs to reveal aspects of their inner world to others and to have their revelations acknowledged” (Bookbinder, 2005).

### **Meeting the needs of the media**

The media are key stakeholders in risk communication, whether or not they send out the ‘right’ message, or the message you want them to send. Organisations involved in risk communication are scrutinised closely by the media and, ultimately, the wider public. Managing the format and message with the media requires a range of tools and skills, organisational accountability and policy.

#### *Knowing the media*

Why do we need to meet the needs of the media? The media can shape and influence public opinion about the message we want portrayed. Although you may know the message you want to portray, this may not be the one portrayed by the media if no process or an inappropriate process has been followed or established within your organisation when dealing with them.

An essential element to meeting the needs of the media is understanding their needs:

*A reporter’s job is news, not education, events not issues or principles. (Sandman, 1986)*

*The media’s main value to you is to keep the browsers adequately informed and to keep them feeling adequately informed. (Sandman, 2003)*

Whatever view, the media is a tool for risk communication. What makes news for media is conflict or drama, human interest, an angle or relevance. It is through this that an organisation’s successes and failures can be portrayed. Successful risk communication will draw on competencies, unsuccessful on incompetencies.

Just as important as understanding the media’s needs is to understand the needs of its audience:

*Words and media are important but so too are the diverse range of priorities and attitudes among those involved. (Jasanoff et al, 1995)*

It is through the media that the message can be delivered to the intended audience. Use the wrong medium and your message may be lost.

#### *Tools and skills for meeting media needs*

The media will want to capture everything that is said or made available. Several simple tools can be applied to the information you wish to portray to meet their



### **Case Study – Change Management**

Change management often conjures up fears and instability, and is often misunderstood by those who do not understand what the objective is. Within risk communication, there is an element of change management when presenting a message – a risk exists, there is a solution to mitigate it, but changes are required. Using empathy to present a message can mitigate the concerns of the audience.

Recently faced with a risk-based change to resourcing within a number of fire brigades of the New Zealand Fire Service, the project team leader looked at what role empathy could play in presenting the message.

The main approach undertaken to make these changes was based on communicating directly with the brigades to demonstrate ownership of the decision and begin the process of mitigating concerns or answering questions.

The process involved establishing the brigades' concerns with the entire process of resourcing – from testing, maintenance, standardisation within geographic clusters to the use of resources within their communities. Establishing these concerns helped managers understand how to present the message that acknowledged their concerns, using empathy to establish a relationship. With a relationship established, being able to offer up solutions to the concerns of the brigades helped focus on the larger need to change resourcing and the supporting structures of testing, maintenance, etc.

Staying focused throughout the process of communicating the risk-based resourcing model, and using empathy to connect with the brigades, resulted in an acceptance of the change. This empathetic method has left a number of the brigades with ownership of the change, as they have felt part of the process and understand the logic surrounding the change.

needs when providing information.

1. Create an easy-to-find online outlet. If utilising an electronic medium to communicate risk, an online outlet enables information to be updated regularly. The media can then access this information and receive automatic updates. This is particularly important during any long duration operation where key messages may need to be passed on regularly or if public and media interest is high. For example, a major roading upgrade affecting traffic at specific places and times may change daily.
2. Use a number of formats. The media is dynamic in the way it collects and disseminates its views through various forms, e.g. local paper, international press and specialist topic papers. Each media agent will have a format it requires for collecting this information. A common fault with a media release from an organisation is the use of the PDF format – editable content that can be easily imported is much preferred. Ensuring that when releasing informa-

tion to the media some consideration is given to the format will enhance any working relationship and assist with putting the message across.

3. Ensure accurate contact information is provided on every media release. To ensure the continuity of information flow and to give the media a contact point for further clarification, comment or additional information, ensure the contact details of the most appropriate person in the organisation is on each release. This may be a role within the organisation rather than a name, especially in a multi-shift organisation.

Establishing a policy within the organisation to determine what roles and responsibilities exist in speaking with the media is not only about ensuring the right message gets across, but is about defining the process for the media when comment is made. This is particularly so within government departments where public scrutiny of their practices is highlighted through the media and often as a result of something negative rather than positive.

Key pointers to dealing with the media are:

- Never lie – the easiest way to be embarrassed is to lie. Do not make an answer up regarding an issue. If the situation permits, advise the media that you can seek further clarification on the point they are interested in.
- Be courteous – being polite to the media ensures some level of balance. Taking an alternative approach may lead to a love-hate relationship that can be portrayed within the media in preference to the desired message, e.g. politicians' relationship with the media.
- Be aware of deadlines – find out the deadlines different media outlets are working to and do your best to work with them to meet those deadlines.
- Make yourself available to the media – it is important to recognise the level of power and influence the media have within the community. If you have given the correct contact details, it may help you clarify an aspect of the information prior to print or broadcast, and allow for further contact. It is important to recognise this relationship and to ensure that an appropriate spokesperson is available.

While all these skills and simple processes can help meet the needs of the media and can strengthen the relationship, it is important to remember that the media has no alliances. Their primary need is to sell – newspapers, magazines, advertising. Their key interest is to get the story out to the public first and in a way that will give them the best headlines.

Therefore, in risk communication, an element of risk lies in using the communication medium of 'the media'.

*Media don't especially want to know the ins and outs of how great the risk is likely to be, how sure the experts are or how they found out. If the story is important enough these technical details merit a follow up, a side bar on the 3<sup>rd</sup> or 4<sup>th</sup> day. (Sandman, 1986)*

### **Case Study – Petrol Tanker Accident**

When emergency incidents occur that may give the media an angle for a story, the way the emergency service concerned manages the information surrounding the incident can either provide the story or report the incident. Within the New Zealand Fire Service, a guide has been developed to help those working with the media to ensure information is factual or to provide an avenue to put across an educational message.

Following a petrol tanker accident that involved a number of emergency services, local and regional councils, industry specialists and roading authorities, media interest was strong. Concerns about the environmental impact this incident could have caused raised media interest on a national scale, with major television news, radio and newspaper representatives present at the accident site.

A concern of the media was the environmental aspect and the ‘danger’ level of what emergency services were doing in removing some 36,000 litres of fuel. There was an opportunity to ensure that the organisation’s role and success could be portrayed and to mitigate the perception of the danger in operations and the environment.

The Fire Service Commander did an interview with the news media explaining what operations had been undertaken and the steps currently being undertaken.

During the interviews, every effort was made to meet the needs of the media, such as:

- establishing an area to do the interview that provided the television media a suitable backdrop to support their news story;
- structuring the content of the interview with the media before formal question time;
- not using organisational jargon;
- speaking in short, structured sentences to allow the media news ‘bites’;
- providing full name and service position; and
- structuring a period that allowed for photos and camera shots of the scene that supported the media’s interest.

The outcome of this approach ensured:

- the needs of the media were met;
- the message portrayed within the paper, on radio and on television was factual;
- concerns raised by the media were mitigated; and

- the audience had an answer on what had happened, the risks present, and who had been involved.

These steps followed organisational policy that is an essential element to meeting the needs of the media.

### **Making headlines: looking for the fishhooks**

The proliferation of media outlets and the competition between the international conglomerates that own most of them mean the media landscape is very different to what it was just a few years ago.

In a deregulated open market, the dominant players set the tone, with packaged, predictable formats directed at audiences segmented and maximised around advertising. Stories are shorter, punchier, and visual – anything with pictures sells. Questions and responses are highly edited, and the language used is colourful and emotive. Conflict, disasters, scandal, controversy – that’s what journalists look for in a story.

To create a story, participants are often assigned set ‘roles’: victim, villain, hero, witness, expert. The journalist will want to know what happened: When? Why? Whose fault was it? What was your role? How much did it cost? What do you feel about it?

When assessing any given risk communication situation for its news ‘value’, bear those points in mind and look for ways in which to give the journalist enough to make a story, while avoiding the sort of headlines every organisation dreads.

To deal effectively with situations where media are likely to be involved, ensure that key spokespeople are clearly identified and well trained in responding to media queries.

Always prepare and plan. Do not be caught out by off-the-cuff questions and door stopping. Use a message map to prepare your key points, prioritising and condensing them until you are sure you have a sound bite a journalist will want to use. Get your main point down to five seconds – about 15 words; it’s all the time you may have to get out the most important information.

Keep your key messages to the forefront and look for ways to bring any interview back to them, no matter what is asked.

- Don’t lose your cool, no matter what the provocation.
- Don’t use jargon – you’ll lose your audience and are unlikely to get your message across.
- Don’t say anything off the record, unless you intend for it to be made public.
- Don’t answer difficult questions that haven’t actually been asked.

## The use of numbers and probabilities

Risk managers love numbers! The concepts behind modern risk management exist only because of the development of the mathematics of probability 350 years ago, starting with Blaise Pascal, through to Thomas Bayes a century later, and more recently, Harry Markowitz and his theory of portfolio diversification. But there are a number of problems associated with using numbers to communicate risk.

### *Not being able to think with numbers*

Firstly, many people do not know how to think with numbers, or to reason about uncertainty and risk – they are ‘statistically innumerate’, as Gerd Gigerenzer points out in *Reckoning with Risk* (2003). He reports on a German study where 1,000 people were asked to choose what ‘40 percent’ means, from (i) one quarter, (ii) 4 out of 10, or (iii) every 40<sup>th</sup> person.

About a third of those questioned got it wrong. Even among professionals such as physicians, Gigerenzer found a high level of statistical innumeracy, for example in dealing with false positives in cancer screening techniques such as mammography.

He presented the following information to a group of physicians:

“The probability that a group of asymptomatic women has breast cancer is 0.8%. If a woman has breast cancer, the probability is 90% that she will have a positive mammogram. If a woman does not have breast cancer, the probability is 7% that she will still have a positive mammogram.” Imagine a woman who has a positive mammogram. What is the probability that she actually has breast cancer?

The answers ranged from 1% to 90%, with the highest number answering 90%. Only a small number got the correct answer of 9%. But when he presented the same problem in a different way to a similar group of physicians, most got the correct answer. This is the alternative way Gigerenzer presented it:

“Eight out of every 1,000 women have breast cancer. Of these 8 women with breast cancer, 7 will have a positive mammogram. Of the remaining 992 women who don’t have breast cancer, some 70 will still have a positive mammogram. Imagine a sample of women who have positive mammograms in screening. How many of these women actually have breast cancer?”

Why did a much greater number of physicians give a correct answer for the problem when it was presented in this way? Because even people who are statistically innumerate mostly know how to count!

So the first rule of risk communication in relation to the mathematics of risk is, where possible, always use frequencies of occurrence rather than probabilities.

Probabilities deal with numbers between 0 and 1, or with percentages, and require

mathematical formulae to solve the problem. Frequencies are expressed as numbers that can simply be added, subtracted, multiplied or divided.

Solving the problem can be made even easier if the frequencies are depicted visually as a tree with numerical ‘branches’. For each category (starting with 1,000 people) split them into two branches, 8 with cancer and 992 without cancer; the 8 with cancer split into seven who test positive and one who doesn’t, and the 992 without cancer split into 70 who test positive and 922 who don’t).

The particular type of miscommunication outlined above relates to *conditional probabilities*, and is very common. Saying “if a woman has breast cancer, there is a 90% probability that she will test positive on a mammogram” is not the same as saying “if a woman tests positive, the probability that she has breast cancer is 90%”.

But it is not the only type of miscommunication when using numbers. Another very common problem involves *absolute* and *relative* percentages.

Consider the following, examples of which can be seen in newspapers nearly every day:

*The number of crimes solved by police fell 9% over the last year, from 43% to 34%.*

Did the number of crimes solved fall by 9%?

If we think about the problem in frequencies, we would see that for every 100 crimes committed a year ago, 43 were solved. Currently, for every 100 crimes committed, 34 are solved. As the number 34 is 21% smaller than the number 43 (9 divided by 43 expressed as a percentage), it would also be true to report that “The number of crimes solved by police fell 21% over the last year, from 43% to 34%”. Which is correct?

The first way of depicting the story uses *absolute* percentage reduction, whereas the second way uses *relative* percentage reduction. Relative percentages are more correct mathematically if the sentence is worded as the example above, but absolute percentages are more easily understood by the average reader (how many people would write to the editor to point out the ‘error’ if the second sentence had been used?).

The miscommunication problem is that both methods are used interchangeably, with the choice often depending on what point the writer is trying to make. As relative percentages are always larger, they are often used when reporting positive outcomes, and vice versa.

This potential for miscommunication of this type gets larger as the percentages get smaller.

Gigerenzer quotes the following example relating to a drug trial:

<i>Treatment</i>	<i>Deaths per thousand people with condition</i>
Drug	32
Placebo	41

The absolute reduction in deaths is less than 1% (nine people in 1000), but the relative reduction is 22% (9 divided by 41 expressed as a percentage).

As we saw in relation to the problem of conditional probabilities, if frequencies are used rather than, or in addition to, percentages (such as the frequencies expressed in the drug trial data above), the potential for miscommunication is considerably reduced. The report on the drug trial would then say that “nine fewer people in every 1,000 people with the condition died when taking the drug” – simple and unambiguous.

Of course, it is not always possible to quote frequency data concerning risks, as it is usually only available when historical data has been able to be collected. Using frequency data where a probability has only been estimated (for example, based on expert opinion) would give rise to a quite different problem – the illusion of certainty.

A third very common type of miscommunication through the use of numbers involves single number probabilities without any reference to what they relate to.

Consider the following statements:

There is a 10% probability of an magnitude 7.6 earthquake in Wellington.

There is a 1% chance of dying in a road accident in New Zealand.

There is an 80% chance that the operation will be successful.

All the above statements are true – but only when qualified with additional reference information relating to the period over which the percentage is calculated. When this vital information is added, the probabilities might be communicated as follows:

There is a 10% probability of a magnitude 7.6 earthquake in Wellington within the next 50 years.

There is a 1% chance of dying in a road accident in New Zealand over a person's average lifetime of 75 years.

There is an 80% chance that the operation will be successful in prolonging life for a further 5 years.

Miscommunication of this type often occurs because people remember only the percentage figure, and subsequently pass it on without the reference information.

Once again, the miscommunication within the first set of statements above might

have been avoided if the writer had used a frequency statement first, because they are more likely to force you to think about the reference information: “One person in every 100 will die in a road accident over a person’s average lifetime of 75 years”.

*Incorrect risk inferences from numbers*

Even with the reference information included, miscommunication can occur when people try to draw from probability numbers a conclusion that cannot be inferred without additional information.

Take the example above of the deaths from road accidents in New Zealand, which is based on data from several years ago (500 deaths amongst a population of 3.8 million, and a lifetime averaging 75 years, assuming a similar death rate during that period).

Data from another country might be 4000 deaths amongst a population of 60 million, i.e., a 0.5% chance of dying in a road accident over a person’s lifetime. Can we infer from this data that it is twice as dangerous to drive on New Zealand’s roads? We may think so – but we have not been given any information on how many kilometres people typically drive in either country.

If we are now told that people in New Zealand drive twice as far on average each year compared to the other country, we could infer that it is equally as dangerous to drive in that country as it is in New Zealand.

Lesson: when we try to infer risk information from data, we must ensure that we have sufficient data to make the inference a valid one, otherwise we may be grossly miscommunicating the extent of the risk.

*Precision versus accuracy*

Numbers often imply a level of accuracy regarding the size of a risk that simply does not exist. Some risk experts distinguish between ‘uncertainty’ and ‘risk’, using the latter term only when there are numerical probabilities able to be assigned to it (they may be either objective, from historical data for example, or subjective).

This is not a recommended approach, as all risk is fundamentally associated with uncertainty – after all, if an event is ‘certain’, there would be no risk.

However, we need to guard against using precise numbers to imply a level of accuracy – ‘certainty about the uncertainty’ – that simply isn’t warranted.

At one level, this is similar to the high school mathematics discipline of rounding an answer to a particular number of significant figures or decimal places that reflects the accuracy of the input figures: 2 times 2 does not equal 4.0000000, even if that is what your calculator says!

Similarly, you should not communicate a ‘1 in 6 chance of occurring’ as ‘a



16.666667% chance of occurring', or even as 'a 16.67% chance'. There is a reasonable likelihood that the '1 in 6' phrase was communicating an approximate value in the first place, and to redefine it to even two significant figures is creating an illusion of accuracy about the probability which is completely different – a 'triumph of precision over accuracy', as some people say.

The problem is often evident in risk management practice when 'semi-quantitative' risk analysis techniques are used. It is fairly common to assign numerical values to qualitative descriptors of likelihood (such as rare, unlikely, possible, likely, almost certain, etc.) and/or consequence, in order to perform mathematical analysis of the risk size (e.g., by multiplying the assigned likelihood value by the assigned consequence value). Thus, for example, the descriptor 'rare' may be assigned a figure of 1%, 'unlikely' may be assigned 5%, etc.

To the uninformed, the use of these figures can imply that they actually mean something in a real numerical sense, when in fact they are meaningless as real measures. As AS/NZS 4360 notes, "the value allocated to each description may not bear an accurate relationship to the actual magnitude of consequences or likelihood", and the associated handbook warns "If using a semi-quantitative approach, it is important not to interpret the results to a finer level of precision than is actually contained in the initial descriptive rankings. Numbers should not be used to give an appearance of a level of precision which does not exist".

Numbers in risk communication are of greatest use in relating relative risks. Absolute risk values lack context for many people but, if they can use the values to compare the risk to something they are familiar with, the value conveys meaning such as 'this is twice as high a risk as that'.

#### *Avoiding miscommunication with numbers – a summary*

- Remember that many people are statistically innumerate.
- Use frequency statements whenever possible.
- Be careful not to reverse the order of conditional probabilities.
- Don't confuse absolute and relative percentages.
- Don't use single number probabilities without any reference information.
- Be careful of drawing incorrect risk inferences from numbers.
- Don't use precise numbers to imply a level of accuracy that doesn't exist.

#### **The tension between simplification and excessive detail**

Analysts have their own understanding and perspectives on risk. Often their understanding of details and interdependencies make it difficult to provide simple answers. As with all stakeholders, effectively engaging in risk communication with analysts requires some appreciation of their perspectives.

Everyone has experienced times when we have wanted the answer to a question,

but what comes back to us is so overwhelming that we are instead presented with a dilemma: either accept that answer, or ask a further question.

So it is with risk practitioners. In attempting to deliver clarity and concision risk practitioners may instead bring forth an overwhelming combination of the extensive and the detailed. A tension then arises in thoughts of those whom we brief on the results of our work: do we live with this awareness of the extent of our ignorance and get on with our lives, or do we engage it and ask another question?

Our clients are busy people. They are not looking for something more to do, when up pops a report from people ostensibly working for their organisation that sets out large numbers of actions that someone must expedite. The tension exists from the moment the client starts wondering: 'Must we?' 'Do we have to?' 'Isn't there something simpler?'

The tension between what is wanted and what is offered serves an economic purpose: keeping analysts in work! So, successfully removing the tension might be career limiting for those whose job it is.

But this should not be so. Adam Smith said that it was in the best interests of themselves that the butcher and baker attend to the best interests of their customers. And so it should be for providers of risk services. If Adam Smith is right, then analysts should be able to succeed in meeting the best interests of their clients by resolving the tension, and letting customers walk out the door. If the work of the analyst benefits the client, then the client should return.

The key to finishing risk analysis work is to prevent the tension arising in the first place, by *not* presenting overwhelming amounts of information that require more processing and stimulate more questions.

To a psychologist, tension is the disruptive and upsetting condition that occurs when there is a heightened level of anxiety about the stable continuation of orderly life. This tension can be resolved if the actions demanded of the executive as a result of the risk analysis are both few in number and simple to enact. This means that they must be easy to understand and, most importantly, they must be obviously and substantially do-able by the resources at the executives' disposal as part of the ordinary business of the company.

Even if analysts have carried out sophisticated and subtle analysis, they must then develop as simple a solution as possible for the treatment of the risk they have found. The analysis of the problem isn't the answer. The solution to it is, and that is where the focus should be.

Analysts who want to deliver must accept that 'the detail' is their domain, and that 'the simple' is the client's. To communicate detail is simply the wrong thing to do. Clients might be comforted to know that the detail is there, strongly underpinning the simplicity, but they do not need to know it.

Analysts should provide solutions for the treatment of risk, not the workings used to derive it. With this simple rule, the substantial cause of the tension is gone. Clients should not need to study in order to understand what they need to do. Analysts who require this of them, in the misguided view that a client will be impressed with lots of cogs, springs and balance wheels, is acting contrary to Adam Smith's rules governing their own business success.

Even if the focus has been on finding a simple solution to a complex problem – i.e., a treatment that can be implemented largely with the available resources – that does not mean the treatment will be actioned. If it is not, the analyst should not point a finger at the client, nor hide behind management speak – ‘buy in is needed from the top’, ‘enterprise wide cohesion will be called for’, ‘effective communication of roles and responsibilities is a pre-requisite’ – as preconditions for their work being successful. Instead the analyst works out how to get viable risk treatment actions placed and eventually cleared.

‘Simple solutions carried out’ is the goal of risk analysis and if this is not attained, the funders of risk work would be right to question its value. When scoping work, it is often preferable for outputs to be specified rather than inputs. But in risk work, output specifications are themselves inadequate, because their associated quanta are open-ended.

It is rational to ask for ‘a list of the risks’, but irrational to say ‘...and there must be only five of them’. Instead, the analyst must think in terms of outcomes, and eventually influence the client towards thinking of specifying risk work in this way. Thus: ‘the risk analysis derives a strategy for halving the client's risk exposure in five years’; or, ‘the risk analysis must calculate an opening date that has a 95% level of confidence of being met’.

For an analyst to get viable actions accepted by a client, they must first ensure the specification of their work is outcomes-based – which is what the client wants – and then show that the actions will deliver the outcomes. As long as the above advice on simplicity is followed, then there is no logical reason for the actions not to be accepted.

It is not easy to deliver simple solutions to outcomes-based requirements that are justified by workings as sophisticated as is necessary, and so some practical tactics might help.

Risk treatment actions should be targeted according to what the recipients are empowered to expedite. There is little point in recommending to a project manager that changes in personnel policy need to be made to prevent trainees leaving after two years, just as there would be no point in recommending to an HR director that a construction site be floodlit in winter.

Risk treatments that require revisions to investment strategy or policy should be directed to the CEO or the Board of Directors, in a report written specifically for them:

*A second tier of funding is required to underwrite the potential risk exposure on construction risk [investment strategy – Board]*

*Recruitment Policy must permit a +25% increase in salary levels for civil engineers if they are to be retained [policy – Board]*

Risk treatments that require changes to the body of company process should be directed at senior managers.

*Work on the delayed new IT centre should be suspended and IT staff involved redeployed to install life extension modifications to the current centre [process – senior managers]*

*The emergency generators should be brought out of reserve and loaned to the contractor to power floodlights that would permit night working [process – senior managers]*

Risk treatments that require changes to the procedures staff follow in their operation of the company assets should be directed at middle managers.

*Goods Inwards need to fast track deliveries to the print room the same day for three months. Quality Control procedures can be by-passed for this [procedure – middle managers]*

*The development area needs to be secure and all external reports cleared before release [procedure – middle managers]*

Risk treatments that require changes to established custom and practice on a specific construction site, an office, a meeting or any other work situation, should be directed at the immediate management of the individuals concerned.

*Staff must not use the fuel bay access as a short cut to the car park [practice – managers concerned]*

*All inquiries from the press are to be directed to the Press Office [practice – managers concerned]*

It should be clear from the examples that to communicate these rational actions to any other recipient would be irrational, would introduce tension, and worse, probably result in ineffective, or no, treatment.

A well thought out allocation of treatment is, of itself, insufficient because it is possible that it might be put into practice less than perfectly. The most common signs of this are that treatment actions are neglected, and that a counter-view emerges of what they should be.

The wise analyst needs to anticipate reactions such as these and consider not only what needs to be done, but also how much of it falls onto the shoulders of the groups and individuals concerned. The amount of effort imposed on them should not be unreasonable and the argument for expending it, persuasive.

Each group should receive a Risk Treatment Plan (RTP) that has been prepared specifically for them. This does not mean that each one risk-one person pairing gets its own RTP, but neither should there be a register of 500 risks with each

person having to filter out their actions. A well-struck balance is called for, and if outcomes are the objective of the risk study, that balance should be biased towards a few specific tasks per group.

Each group has a capacity for treatment work largely dictated by the numbers of people within it, the limits of its delegated authority, and the time they have available. It would be wrong to allocate a group a quantum of treatment action bigger than it could cope with; or that would require it to act outside of its prescribed domain to expedite; or that it has no time in its work plan to carry out.

The quantum is a difficult call but some reasonable guidelines (not absolutes) are:

- No more than three actions to each member of the target group.
- For the actions to have a 50% work content in common, i.e. doing one thing gets the actionee half way through all three.
- For the actions to be 75% a minor variation of their ordinary work.
- For the actions to be capable of substantial completion within two months.
- For those actions to be designed, or phrased, in such a way that the completion can be declared, i.e. that they are not open ended: e.g. 'report back on competitor market share next month' and not 'monitor competitor market share'.

So for a treatment plan directed at a planning department comprising one leader with two staff in a State Owned Enterprise 'challenged' to deliver twice the usual quantity of deliverables in half the time, the analyst should devise an risk treatment plan along the following lines:

Nine actions of which...

- The team leader is asked to:
  - brief the Board to assure them that matters are in hand;
  - consult the Press Office to agree the boundaries of public disclosure; and
  - prepare and submit budget changes to the Finance Department.
- Staff member one is asked to:
  - devise a costed resource plan for the forthcoming additional work load;
  - prepare the text of a recruitment advertisement; and
  - complete the annual assessments of the existing team to ensure a proper effort is made to retain their services.
- Staff member number two is asked to:
  - specify the IT requirements for a doubling in size of the team;
  - specify the office requirements for same; and
  - place the necessary purchase orders with the appropriate departments.

This might be completely at odds with the usual approach to the management of risk, which is to decide a treatment action for each discrete risk and prioritise according to the severity of its potential impact and likelihood.

Instead it is recommended that the number of treatment actions should be limited to what can be done, on the grounds that to recommend what cannot be, either in terms of quantity, inappropriateness or imprecision, is wasteful. It might be self-serving in the short term to roll lots of things out and check up on them now and again. But clients will eventually become aware that the treatments recommended do not give them the outcomes they want, and this will ultimately devalue the benefit of having risk analysis done in the first place.

Limiting the number of actions to what can be done should not imply that the number of risks should also be limited. This should remain the number identified. But an analyst must distil the number found to match the number of treatment actions that can be tolerated. This will almost certainly require some thought into the root causes of the risks and probably a feedback loop from the drafting of the actions to the description of the risks, producing a map of identified risks to treatment actions that might possibly see meta-risk descriptions inserted between the two.

Such care to devise a workable solution may still founder. The usual explanation given for the failure of risk processes to treat risk successfully is 'lack of client support from the top'. This is often disingenuous on the part of the analysts. Consider the example of nine actions above. No company top tier would reject them nor fail to support them. What would limit implementation would be a failure on the part of the analyst to state clearly what is needed by staff to complete the actions in terms of finance, time and resources. Or if this is urgent or too difficult for them to arrange, to take it upon themselves to make the necessary arrangements on their behalf.

Even when this is done, an analyst's solution for risk treatment might still be invalid. First, no risk treatment should be recommended if it is contrary to contract, mandated specifications or the applicable law unless this is explicitly stated with solutions for avoidance (not evasion).

Second, it is invalid to recommend treatment actions for others to carry out if they have no authority to act. The authority needs to be real and if it is not there, the analyst needs to draw this to the attention of those able to delegate it, which may mean widening the circulation of an individually-focused risk treatment report. A simple way to check for a shortfall in authority is to ask before a report is published if those given actions can carry them out without recourse to others.

All actions will at some stage be the subject of review and the benefits they might produce should be analysed. Such an analysis should be quantitative if at all possible. That is, the numbers in it should have dimensions that relate to real life – cost, weeks, equivalent fatalities, numbers of species, and so on – rather than

pseudo risk rankings based on one person's value judgments, with the numbers of things found depending on research effort.

Analysis should show estimates of the exposure to risk before and after the treatment plan. If exposure to risk does not behave according to the textbooks – i.e., it reduces persistently over time, and that it might get worse before it gets less – then this should be made explicit if only to protect the treatment plan and those implementing it from questioning.

To resolve the tension between simplification and excessive detail, it is important to recognise that both have their rightful place in a risk management process. The detail is a natural consequence of an analyst's research. A thorough understanding of it is a firm basis for derivation of risk treatment solutions. The simplification is achieved by limiting the number of actions and their specification to something that is within the capability and ability of the recipients to deliver. This might mean deriving specific plans for specific teams, with a high proportion of ordinary business in their make up. These treatment plans should not be contrary to contract nor to delegated authority without commensurate suggestions for avoidance (not evasion). They should be supported by quantitative assessment of their costs and benefits.

The tension that lasts is the unresolved one. The tension that never lasts is the one not introduced in the first place.

### **The challenges of communicating uncertainty**

The certain world is one in which 'Yes', '100%', 'No problem', 'It will' is commonplace and comforting. When we approach the boundaries of this known world and switch to 'Maybe', 'A good chance', 'Shouldn't be a problem', 'It might', we feel unsafe. This is surprising, for the domain of 'the uncertain' is more widespread, more persistent and more present in everyday life than 'the certain', and we ought to be much more familiar with it than we are.

The problem lies in the mathematics. Most of us are competent at arithmetic because of the need to count change. This gives us confidence dealing with certainty because the probabilities that define it can be usefully manipulated using simple arithmetic: they add up and they multiply. It is easy to do, and the results can be readily understood because they are useful to us in the everyday world.

But when we start to talk in terms of uncertainty, arithmetic rapidly transforms into mathematics and begins to make use of such unsettling terms as combinations, permutations, factorials, samples, populations, inferences etc. One by one we retire from the struggle to understand as the mathematics plunges out of the world of certainty, and the general audience logs off mentally the moment  $(1-P)$  appears on the whiteboard.

Let us assume we have to communicate an analysis that has a high degree of

uncertainty about it, either in the confidence of its conclusions or intrinsic to the workings of the analysis itself. There are two barriers that must be overcome to help an audience understand it better.

The first is the most obvious one: understand the audience and their appetite for the vocabulary, syntax and semantics in which the analysis is to be couched. An academic audience will readily follow and prefer ‘the joint probability of...’ and the ‘with an R-squared value of...’, but a non-academic audience will find it much easier to follow imprecisions like ‘the probability of both happening drops to...’ and ‘...has a good match to...’.

To facilitate this it might be worth the time and money to prepare two, or more, reports on the same analysis. One couched in precise terms, and the other in everyday language. It would probably be useful to name them slightly differently to attract the right readers, for example:

*Statistical Analysis and Results of a Risk Assessment into the Costs and Timescales of a Proposed Programme of National Infrastructure*

...or...

*National Infrastructure: Findings, Conclusions and Recommendations of an Investigation*

Which title would you reach for?

Other aspects need to be understood too. The audience may or may not be an homogenous group. If it is not, then working out to what degree the various sub-groups are invested in the risks and outcomes may be important – but not necessarily. Such an analysis may be full of insight, but it would then be impossible to communicate without being influenced by it. Nuances will appear and positions will be taken. All of which may count against eventual acceptance of the analysis because the audience will perceive them and may react against them. It is important to be clear, honest and neutral, for although one might defend oneself to a hostile audience as being ‘only the messenger’, there is no doubt that warming to the messenger does help carry a message.

Recognise that an audience will be mostly made up of people representing constituencies. Knowing what these constituencies are is valuable because it allows one to anticipate questions. Recognise that most of these questions are ones the questioners themselves will be asked.

So take a detached view, think about what Representative A would ask about the issue, then prepare a Question & Answer list, and work through this at the same time as working through the communication. And so on through the list of representatives, thinking about supplementary questions as well.

The second barrier to overcome when communicating an analysis peppered with uncertainty is to understand yourself. For most people, this implies exercising some self control. There can be many reasons for wanting to communicate: we



are obliged to do so, we believe we must, we like an audience, we want to impress, we want to contribute to the debate. But the one that must prevail when the time comes to communicate the results of an analysis is that we believe it is in our audiences' best interests to know, and that they will act.

## **Informal and Formal Communications Channels**

### **Official channels for communications**

From an analyst's perspective there is really only one official channel of communication, and that must be to the client. The client has paid for the analysis and for the treatment solution, and it would be a breach of professional standards, and probably the contract as well, to communicate anything arising from or about their commission to anyone else but them. It is then for the client to decide who is briefed, and when, on what the analysis has found.

There will, however, be occasions when an analyst feels their integrity is being compromised. There are three sets of circumstances in which this might be the case. They are when the client, who is normally a paid servant of the owners of the legal entity that has hired the analyst, might act:

- contrary to the owners' interests;
- in breach of the law; and/or
- in a manner prejudicial to society.

The following guidance may help.

In the first case, where the owners' interests are threatened, an analyst must first complete the work to the best of their ability. Second, they must ensure their records are complete with all errors and omissions noted. Third, a copy of these records should be deposited with a third party for safe-keeping, and fourth, they should hold a minuted meeting with their client to explain their concerns.

If the meeting cannot resolve the matter satisfactorily, the analyst should request a repeat meeting in the presence of a non-executive director. If this is not forthcoming then the analyst should ask his or her own employers to approach a non-executive director with this request. A non-executive director cannot be a shareholder of the company and must be trusted by the analyst to act with independence in the interests of the shareholders. Once the non-executive director has had the issue explained comprehensively, the analyst has fulfilled their duty and should make no other petition. The matter is now for the Board to decide.

A minor matter (but of great importance to the analyst) is that they should ask the non-executive director to secure payment of their fees by overruling any blocks or delays that might be put on their payment as a consequence of the analyst's actions.

In the second case, in which a breach of the law is thought likely, the analyst

must carry out the same first three steps as above, remembering that what is being archived may be subpoenaed as evidence before a court of law. This requires diligence and honesty: nothing should be omitted from the record. The analyst is generally an employee of a legal entity and as such acts in the name of that entity, and so must brief his or her own managers. It is then for the employer, not the analyst, to take legal advice on what to do next and to act accordingly.

In the third case, in which actions prejudicial to society are the issue of concern (possibly without a clear, potential breach of the law or of the owners' interests), then the analyst should seek the advice of their professional institution, which will advise independently in the analyst's best interests and may even take up the matter.

Under no circumstances talk to the media or to politicians. Control will be lost and the matter made public with positions entrenched. Putting the truth on the record – of the analysis, of what was done, of its shortcomings, of its findings – is the main duty of an analyst, and it is one that is always best done away from the glare of the spotlight.

### **Staff are also members of the community**

The IAG case study illustrates how one organisation actively sought to work with the community to communicate on risks and collaboratively find solutions. When undertaking risk communication with the public, it is important that organisations recognise their role as part of the community.

#### **Case Study – Flood Risk Management: An Insurer's Perspective**

Storms and floods are becoming an increasingly regular occurrence in New Zealand. As a consequence, insurance claims from weather disasters are climbing dramatically.

For IAG NZ, New Zealand's largest insurer trading under the State and NZI brands, weather has become a vital concern. Weather related disasters represent 19 of the top 20 insurance losses in New Zealand with flooding by far the most significant cause of damage, responsible for 70% of all weather-related losses (Insurance Council New Zealand).

In recent years, *several* 'one-in-100' year flooding events have occurred. Thames Coromandel, central New Zealand, Gisborne and the Bay of Plenty have all been affected resulting in the disruption of lives and insurance costs amounting to hundreds of millions.

Weather and climate are 'core business' for the insurance industry. Insurers underwrite weather-related catastrophes by calculating, pricing and spreading the risk and then meeting claims when they arise. Unlike many overseas

countries, in New Zealand flooding is a standard peril covered by property and home insurance. But the challenge the insurance industry face here, given any increase in the frequency and severity of events, is how to ensure flood cover remains sustainable and affordable.

Following severe weather events insurance plays a vital role in helping the community get back on its feet. The 2002 'weather bomb' and 2004 central New Zealand storms and flood events highlighted the need for IAG NZ to have a coordinated approach to managing natural disaster events. A formal Disaster Response framework followed. This framework outlines steps from declaring a disaster and convening key decision makers, to the approach in the field and key messages to customers and the media.

As IAG NZ's claims call centre staff deal with the sharp rise in claims call volumes, a nationwide team of loss adjustors are mobilised to assist on the ground. Their brief includes liaising with local emergency and rescue services, civil defence and local authorities on insurance recovery plans and to assist the clean-up and re-building stages. Public safety messages and 'what to do' tips are communicated via the media to assist and reassure customers even before loss adjustors can reach them.

Typically after natural disasters individual groups or organisations are blamed for the problem – local or central governments, town planners, developers, insurers, engineers and the like. But natural disasters are a community-wide issue and management of them and effective recovery from them can only be achieved effectively by community-wide solutions.

But community partnership can also extend beyond immediate relief. In the wake of the 'weather bomb' that devastated part of the Coromandel Peninsula in 2002, IAG NZ joined with territorial authorities to address the significant issue of river flooding on the Thames Coast.

#### *Thames Coromandel Coast flood case study*

The Coromandel Peninsula is known for its stunning environment of rugged ranges and beautiful beaches. It is this environment, characterised by steep, short catchments, hundreds of streams and rivers and high and frequently intense rainfall that also makes the district very vulnerable to the natural hazard of flooding.

In June 2002 a weather bomb hit the Coromandel. The event produced unprecedented rainfall causing trickling streams to become raging torrents in just minutes, carrying fallen trees, boulders and thousands of tonnes of mud through homes, properties and roads.

The weather bomb caused one fatality – a woman was swept out to sea. Homes were shifted by the force of floodwaters and landslides, others were



submerged in mud along with cars, leaving many homeless, their lives turned upside down. Insuring this single event cost IAG NZ more than \$12 million, but its impact on the community was far greater.

Directly after the event IAG NZ's chief executive at the time, David Smith, travelled to Thames and met customers and the mayor of the Thames Coromandel District Council. Seeing the extent of the issues faced by customers and the community, IAG NZ committed to returning once the immediate recovery issues had been dealt with. Subsequently, IAG NZ joined the Peninsula Project, led by Environment Waikato and the Thames Coromandel District Council. The aim of this group was to address river and catchment management issues on the Coromandel Peninsula. The work of the Peninsula Project is ongoing.

Most houses and buildings along the Thames Coast have been built on alluvial deltas and often lie in the path of floodwaters. With a long history of flooding (more than 10 events in the past 20 years) many insurers were refusing to insure residents for flood-related damage to their properties, believing it too difficult to secure returns.

An IAG NZ representative attended public and community working party meetings with residents and council staff. The entire IAG NZ executive team also visited the area and met flood-affected customers and council leaders. IAG NZ heard first-hand accounts of the impact of the disaster, learned how streams behave under flood and were told of the issues that were exacerbating the flooding such as erosion, roading and bridge construction, historic planning and building controls, sediment and debris build up. These meet-

ings also graphically reinforced the vital role insurance plays – providing advice and financial settlements to assist the community to recover.

IAG NZ also collaborated with the councils on flood and climate modelling research specific to the Coromandel. For several years IAG, the Australian parent, has engaged world-leading researchers to investigate extreme weather risk and how these may change in a future climate. This modelling means the parties have a better understanding of flood estimations for the area. These estimations were used by Environment Waikato in developing and assuring that the civil engineering solutions planned would safeguard the community's property and people not just in today's climate, but also tomorrow's.

IAG NZ has reviewed their underwriting process for the coast as a result of the knowledge gained. Flood hazard maps have become an important tool in this process. The maps predict the areas – to a street number level under a one-in-100 year flood scenario – that are most likely to be flooded and to what extent. The maps even detail the depth and speed of flood waters. All applications for home and contents insurance in the Thames Coast area are now dealt with individually by specialist underwriters, a departure from the previous 'one size fits all' approach of many insurers, which had seen blanket withdrawal of flood cover in the past.

The project has committed to flood mitigation plans in the form of stream channel maintenance, pest control, bridge redesign, engineering works and property retirements. IAG NZ is now maintaining a watching brief of the project. Once the risk to property from flood has been reduced, the company expects to be able to further increase availability of affordable flood cover in the area.



Steve Ruru, Chief Executive Officer of the Thames Coromandel District Council, assesses IAG NZ's involvement:

*We really welcome the approach from IAG NZ. It's what we want to see in terms of insurance companies being prepared to sit down and look at the risks in a considered way and getting to understand the issues that are affecting our community, because it is vital for the future well-being of these communities that they can access appropriate insurance cover. We appreciate that the community needs to front up and reduce those risks and we are getting a good deal of acceptance. It's certainly helping that IAG NZ says if you do these works that will help make it a lot easier for us to continue to provide appropriate insurance covers. We are just very appreciative of the work and the relationship we've developed with IAG NZ.*

Risk communication is often thought of as a one-way process: an organisation communicating with an external audience about a perceived risk. But as one of the risk communication rules of thumb is to communicate *before* rather than *after* a crisis, one audience needs particular attention – staff.

Staff in an organisation have a double communication need. They need information in order to do their jobs, whether that is assisting members of the public or ensuring that the organisation is able to keep functioning during risk mitigation or a period of crisis.

Boundaries between an organisation and the community in which it operates are permeable. Staff may be in a situation where they or their families are also personally at risk in some way – so they are both purveyors of and consumers of the risk communications the organisation is involved in. Having 'close hold' approach to communications in such situations just won't work.

The best ways in which to enable staff both to function efficiently in their jobs and to fulfil their responsibilities to their families is to establish clear procedures and to ensure a two-way flow of information within the organisation – well before any risk event take place.

Staff who understand their role in a crisis situation or when managing a risk, and who appreciate its importance, have a better chance of dealing effectively with a crisis situation. Having established and well-practised procedures, with clearly understood lines of management and communication, will enable staff to become risk resilient and to operate efficiently. They need accurate information from sources they trust – usually an immediate manager – as soon as possible, in any situation where they and members of the public may be at risk.



An example where this sort of communication went tragically wrong was the 1947 Ballantynes' Fire in Christchurch. Forty-one people died in the fire, many of them staff, and a key issue identified by a Royal Commission into the blaze was the response of staff to the emergency situation. Many of them stayed working long after smoke was evident throughout the building. There was no evacuation procedure in place and staff lacked awareness of the dangers they and their customers faced:

*... employees, with several notable exceptions, had quite failed to appreciate their danger. He cited cases of some who had seen smoke, had become aware that there was fire, and had calmly continued to their comfortable afternoon tea venue before returning to their respective departments; and of others who, being warned to leave the premises by their respective foremen or forewomen had failed to do so for a considerable time, and in some cases had returned to their quarters to recover possessions rendered trivial by the developing circumstances. Some of the victims had been seen to be standing at windows, seemingly unaware of the horror that was even then besieging them.*

(Walker, 1983)

*Without evacuation drill, without warning-devices, without advice to employees on the steps to be taken in the event of fire, without an automatic connection with the fire brigade, and with employees - many of them young women - numbering some 458, orderly movement, even communication between various departments, can hardly have been expected, and contradictory instructions - some to stay, some to evacuate - took the place of efficient order and movement.*

*59. There is evidence that one of the staff, in a position of some authority, advised female employees to report back to their departments on the upper floors. Such advice was given, it is said, at a time when the smoke from the fire was spreading through the whole building.*

*60. There is evidence that some of the employees were so ignorant of the layout of the premises that they were unaware of alternative methods of exit from one department to another.*

*61. It is quite understandable that, when the fire was first discovered, the information passed casually to members of the staff in various parts of the building remote from the cellar that there was a fire in one of the cellars would not be unduly disturbing, and perhaps the nature of the news that leaked through would induce employees, and indeed the managers, to think that fire in one of the cellars would not be serious.*

(Royal Commission, 1948)

The risk presented by the initial discovery of smoke was not recognised by staff untrained in even the basics of fire safety. Communication was faulty, procedures non-existent, and staff and customers alike suffered.

As a result of the Royal Commission's findings, fire safety consciousness was raised at a national level and fire safety procedures became mandatory. Safety and evacuation drills are now an accepted part of working life, with key staff trained to deal with emergencies that may arise.

The challenge for most organisations is to ensure the sort of risk recognition, information sharing and effective procedures that is now an accepted part of regular fire drills is normalised into other areas of the organisation's activities.

Managers must be fully receptive to and prepared to act on information from employees. All involved must know where they can share risk-related information, know what to do if they run into problems, and which emergency or urgency measures are permitted or required. Clear and simple internal rules are needed to govern the channels of information, the type of information (data format and type of content) and by-pass solutions. Only when the staff member passing on the information is convinced that the authorities in charge will now handle the risk correctly and will not lose sight of it in the future, will these channels prove dependable, trustworthy and efficient.

In return, managers must ensure that staff are the first to be fully informed about any risk situation. The same key guidelines that are used in dealing with an external audience should also be used for an organisation's internal audience:

### **1 Plan and evaluate**

- Establish clear objectives. Do you want to stimulate a response? Or help to resolve an issue?
- What do you know about the risk?
- What do you know about the audience? Work out the different interests involved. Staff will have their own concerns, as well as needing information to enable them to carry out their roles with an external audience.

### **2 Listen, understand and empathise**

- Find out what your staff think and reflect back to ensure you've understood it correctly. Use a range of feedback mechanisms – through union representatives, via managers or, if technology allows, through electronic means such as a feedback e-mail address on the intranet that allows issues to be aired and responses given anonymously.
- Note specific concerns.
- Work out if you're dealing with outrage and *lack* of understanding about the hazard, or outrage and understanding – this affects how you approach the communication. Is the hazard/risk seen as voluntary or involuntary? Can staff, through their actions, influence the outcome of the situation in some way?



### **3 Be open and honest**

- Show respect.
- Admit mistakes.
- Disclose honestly.
- Share information.
- Build trust.
- Be consistent – the same messages should be coming from all managers: from the chief executive through to line managers and team leaders. Staff will be very quick to pick up any disconnect in messaging between different layers of the organisation.

These are all basic tenets of good management, made vital by any situation in which risks are faced.

### **4 Co-ordinate and collaborate**

- Offer to work with critics. If feedback shows either a lack of understanding or active antagonism on the part of some staff, ensure those groups are fully supplied with information and work closely with them to ensure they ‘come on board’.
- Work with others with similar interests. Do other organisations face similar risks or have they done so in the past? Build relationships with them, ensuring staff have a chance to interact with and learn from their counterparts elsewhere.
- Use credible third parties – this may mean bringing in outside experts to talk with staff, or it could mean working with a third party such as a union to ensure they are aware of the risks facing staff and are prepared to do what they can to help.

### **5 Keep it simple**

- Use concrete examples, not jargon when discussing risk issues with staff.
- Only promise what you can do – this goes to heart of credibility issues.
- Offer solutions – and encourage responses, incorporating good ideas from staff into the solutions where possible.
- Explain actions and be accountable.

### **Addressing the rumour mill**

Nature abhors a vacuum – and the absence of hard facts in a crisis situation is bound to ensure an abundance of ‘factoids’ and rumours.

The best way to reduce the likelihood of an active rumour mill operating within an organisation and when dealing with the general public is to follow the key guidelines set out in the previous section.

The importance of two-way communication – listening to the environment, as well as putting out messages – is paramount in situations where rumours may be rife.

Think of it as dealing with some sort of infection:

- monitor the environment to find the source quickly;
- take speedy corrective action;
- inoculate with the truth or practice some form of containment; and
- keep monitoring to catch any further outbreaks.

Listen to what the rumours are telling you – they may be pointing to a breakdown in communication channels, both internally and externally. If people are not getting accurate information, they will find ways of manufacturing information to suit their needs.

The sort of rumours being picked up can tell a lot about people's fears and misunderstandings and can point to ways in which communication can be improved.

For instance, disaffected staff may have their own agenda when it comes to the messages they put out – both to other staff and to external stakeholders. Identifying those involved and getting them on-side will be an important function of any managers involved in dealing with risks.

# 5

## Listening, Learning & Evolving the Process

Kristin Hoskin, Terry Day & David Elms

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### Feedback – What did you Say? *versus* What did they Hear?

One of the difficulties with communication is that messages are open to interpretation. Each person's experience and interests are different and this affects the way they interpret any information that they receive. For this reason, feedback is an extremely valuable component of the communication process.

In a face-to-face conversation the person speaking is constantly receiving feedback through facial expression, gestures such as nodding, verbal confirmation, tonal inflection and body language. The initiator can gauge whether the listener is understanding by the constant feedback they receive.

As the scale of audience increases and/or the communicators become more remote the ease of obtaining feedback decreases. In some cases this can mean that communication becomes entirely one-way and simply turns into information dissemination. When this occurs the opportunity for increased levels of misunderstanding, distrust, outrage and frustration increases and can damage the ability to engage in further communication on the current and on future risk issues.

### Risk perception versus objective risk assessment

*Perception is the process of endowing sensation with meaning... We assimilate our own direct experiences, but these are usually quite sparse and we have to rely mainly on reports from others and particularly from television, newspapers and other media. (Lee, 1981)*

One outcome of a disconnect between risk perception and risk assessment can be unwarranted concern over a given risk. A prime example of this occurred in May 2006 over tsunami warnings in the Bay of Plenty.

The main players in this case were: international media, residents, and the Ministry of Civil Defence and Emergency Management.

At 3:42am on May 4, the Pacific Tsunami Warning Centre (PTWC) issued an alert regarding an offshore earthquake near Tonga. Six minutes later the New Zealand National contacted the PTWC and was informed that a tsunami was unlikely. At this point, just like many previous tsunami alerts, the National Crisis Management Centre (NCMC) was activated to monitor the situation and wait until the tsunami risk was better known.

However, the international media had picked up on the initial alert and at 4am

the Mayor of Gisborne was alerted that a tsunami was heading there by CNN. Various other international media organisations also contacted individuals. International news coverage led to many residents being contacted by friends and family from overseas. By 5am, people were self-evacuating and subsequently considerable criticism was directed at the Ministry of Civil Defence and Emergency Management for not informing people of the impending tsunami until after it was confirmed as a non-event. The New Zealand Herald reported:

*Civil Defence national controller Mike O'Leary defended procedures yesterday, saying headquarters received word that a tsunami was [determined to be] unlikely within 15 minutes of receiving the first Pacific Tsunami Warning Centre report at 3.45am.*

*For that reason the information was not passed on to the media or any Government agencies.*

*Mr O'Leary said staff were not aware until 6am that people had begun evacuating. Once aware, they prepared a press statement.*

The experts in the field of earthquakes, tsunamis and emergency management understood what was likely to occur and recognised the risk as minimal and unworthy of alarming the public. The media, on the other hand, took the message at face-value and, based on their previous knowledge and experience – probably strongly influenced by the December 2004 Indonesian Tsunami – made a different assessment.

*Our messages are designed for scientists and emergency managers but in the modern world, everything we do gets out into the public immediately.*

(Freyer, 2006 )

The result of the event was outrage by the public and local bodies for not being kept better informed by the Ministry of Civil Defence and Emergency Management. The Ministry in turn was frustrated for being targeted because of media reporting that was based on a technically uninformed and incomplete assessment of information that was not intended for that audience to make judgements upon. The information was misinterpreted and a lack of feedback exacerbated the situation.

So how can this type of situation be avoided? Sometimes it can't, but various measures can be taken to try to minimise the occurrence and impact – primarily through increasing the accessibility of providing and receiving feedback. Recognising that modern communication systems tap into a larger and more integrated network than ever before is essential. Examples such as the media and the internet can and do function independently and instantaneously. This further increases the need to establish feedback loops that provide for rapid verification of accurate interpretations and an early alert to messages that require clarification and or refinement.

### **The use of participatory evaluation**

Participatory evaluation is when all the parties involved in both sending and receiving communications assess whether the communication is appropriate to their needs and is proving effective. Evaluation of public participation can be viewed as a way for organisations to mark progress towards goals related to governance such as institutional trust (Chess, 2000). This might typically be carried out by surveys or interviews. Components that can be evaluated include acceptance, satisfaction and adaptation.

Voluntary acceptance is when participants choose to accept a situation rather than change it. This might be accepting a suggested path such as that a school is going to close or accepting that they are exposed to a risk such as living on a flood plain without attempting to mitigate the risk. Evaluating participation requires feedback to determine the level of activity and preferred actions on the part of the participants. In this way the level of involvement by the participants can be tracked.

*Acceptance* can be shown through inaction (no desire to change behaviour), or conformity (no desire to change level of accountability) and the level of protest. The level of acceptance provides insight into the willingness of the public to become actively involved in communicating on a risk or risk strategy. Often, the potential allocation of blame if the risk is realised will influence the level of acceptance. For example, prior to occupational health and safety legislation risk taking in the workplace was accepted as personal responsibility. Under Occupational Safety & Health there is greater accountability and so acceptance of workplace risk taking is much reduced.

*Satisfaction* more than any other evaluation marker is influenced by past performance of the organisations involved. Levels of satisfaction can be assessed to determine what activities the organisation undertook that made the participants feel appropriately consulted and what communications efforts detracted from this goal. This is not limited to public consultations, although these are probably the most well-known through activities such as service provision assessments. Internal satisfaction is often evaluated through staff interviews and retention rates.

Formative evaluation is used to assess *adaptation*. This is done in order to provide feedback during the development and implementation phases of a risk project. It enables adaptation of the consultative process to meet the needs of the participants as the risk management implementation progresses. This may result in refinement of the language used in questionnaires or altering the balance between written, verbal and online communication techniques to better suit the requirements of the participants. Examples of this might include developing multilingual formats or changing the frequency and length of the communication.

All of the indicators obtained from these evaluations (acceptance, satisfaction and adaptation) are ways of gauging the level of complacency, previous good governance, effectiveness of attempts to influence behaviour, or the level of un-

derstanding of the participants' role in managing the risk. The purpose in doing this is provide input for improving risk communication in the future and customising it to better accommodate the needs of the participants within the overall risk strategy.

Prior to May 4 2006, there was widespread acceptance of the assumption by the public and the Ministry of Civil Defence and Emergency Management (MCDEM) that it would inform people of imminent tsunami risks as they arose. Immediately following the morning of May 4 the level of public satisfaction that the MCDEM was providing appropriate notification and was accessible to advise on imminent threats decreased markedly. Informal feedback indicated the sudden change via news media reporting, letters to the editor, talkback radio and statements by local officials. The response of the MCDEM was to re-evaluate its procedures in light of the actions on the part of the international media and the informal feedback.

Since that time both the Pacific Tsunami Warning Centre and the MCDEM have undertaken to communicate better with the media. The Centre has undertaken to make the language of its warnings more suitable for lay interpretation (as a result of feedback) and the ministry is now issuing statements to advise when there is no tsunami risk following earthquakes as well as when there is a risk in order to clarify any information that might be received through other sources. The MCDEM is also working to increase its accessibility and responsiveness to enquiries.

### **Understanding all the risks**

Another outcome of the lack of feedback in risk communication may be that the true value of the risk is not appreciated by the different participants. In this type of scenario the initiator may be trying to encourage the other participants to adopt certain behavioural changes because of a risk that the initiator is concerned about. In many cases, this is a risk that has been quantitatively assessed (the severity and probability of occurrence is known) and the other participants in the communication are exposed to it.

The degree to which feedback is incorporated into evolving the risk strategy can vary. The use of evaluative results (finding out the risk or risks that the other participants are concerned about) can make the desired behavioural changes untenable, particularly if there is a direct conflict. Perceptions of decision-makers, pressures from outside the organisation and social norms can all influence the acceptance of incorporating evaluative results (Chess, 2000) in developing and implementing a risk strategy.

An example is Auckland's soil contamination problems that have been ongoing since 2002.

In 2001, the Auckland Regional Council and Auckland District Health Board undertook an investigation into the potential effect past horticultural activity might

have on what is now residential land (Gaw, 2002). The resultant report indicated that toxin levels in the soil of domestic premises built on previously horticultural land could exceed safe levels and recommended that territorial local authorities should consider requiring site assessments involving contaminant analysis prior to allowing a change in land use, subdivision or redevelopment on green field sites based on the risk to human health and/or ecological receptors (Gaw, 2002).

At this point concerns were raised in the media that soil contained 'toxic levels of contaminants' and were a health risk (as opposed to elevated levels of toxic contaminants). A subsequent report in 2004 used aerial photographs to identify areas that, now residential, had previously been horticultural.

As a result of the two reports, Auckland City Council declared that it would include notices on Land Information Memoranda (LIMs) of up to 5,000 properties indicating that the land was, to the best of the council's knowledge, previously used for horticultural purposes, referring to the soil reports. In order for property owners that were affected to get this notice lifted they would have to, at their expense, have soil samples from these properties tested and cleared.

The Crown Law Office later provided advice to the Ministry for the Environment that "...the test of a real and substantial risk of contamination is not met. Thus, such information... is not a mandatory inclusion in a LIM."

Several key issues were raised by different parties throughout this four-year period of soil studies and resultant actions. The appreciation of risks associated with the studies were different for different stakeholders as were the risk mitigation actions of the Auckland City Council.

The main issues that arose were:

- Impact on property values (responsibility to inform future residents of risks posed by toxins versus risk of reduced returns on property sales and financial impact of proving that a given property does not have high toxin levels).
- Impact on residents' health from residues (potential risk from exposure versus experiences of risk realisation by long term residents).
- Interpretation of results (different threshold levels were listed by different experts).
- Confusion regarding the usage of the terms 'toxin' and 'contaminant'.
- Impact on children (risk to children's health from playing outside in these areas versus relative risk to children from all hazards associated with playing outdoors).
- Impact on home gardens (risk to health from handling soil and eating produce versus financial impact of buying vegetables).

If greater participatory evaluation had been included in shaping the council's assessment and management of the risk, a better understanding of the implications and appropriateness of potential risk strategies would have been achieved

prior to implementation. This would have avoided a lot of frustration by all parties.

### **Feedback as a means of overcoming divergent interpretations**

It is often said that we are living in an information age. Information dissemination is used extensively as a way of educating, informing and consulting but it doesn't necessarily lead to understanding. Rather than simply providing information for open interpretation the use of feedback is essential in establishing an appropriate interpretation and in better understanding the risks involved. Using an isolated perspective to judge the severity of the risk sets the stage for an disproportionate response – either over or under reaction.

The Gaw report (Gaw, 2002) from the Auckland soil scenario identified high levels of contaminants in the soil but the response by the council was disproportionate to the actual health risk posed by the contaminants. Reporting in the media was also based on misinterpretations of the findings.

Although the soil contaminants that were isolated are toxic and were elevated compared to what might be expected (ambient thresholds) they were not so elevated that they posed a significant health risk, especially given the context of Auckland's high level of volcanism. Threshold levels for health, ecological, post-clean-up, ambient and leachate contamination of soils vary. The council did not necessarily have the background knowledge on toxicology to appreciate this.

The follow-on study to the Gaw report was used to identify land that had been used for horticulture but did not involve soil sampling. The council's subsequent action was to place a notice on LIMs of those properties that had been identified in the second study. This response further polarised the council's interpretation of the findings; assuming that the levels found were dangerous and then assuming that all land that had previously been used for horticulture would have similar levels of contamination. Now residents were upset.

Residents were upset because the linkages between their properties and toxins in the soil were not clear and their properties were now marked as potentially contaminated without specific site testing to prove it. Instead, the onus was on the property owners to obtain testing to prove that the properties were not contaminated.

The reasoning for the council's action was based on its risk assessment of the report findings: identifying an unacceptable risk to human health and a risk to the council in the form of potential litigation for not making the risk known – logical, based on its interpretation.

The media, primarily the Auckland daily the *New Zealand Herald*, extrapolated the finding of toxins to potential impacts on gardeners, children and other participants in outdoor activities, in some cases confusing the scientific meaning of the



### **Case Study – Avalanche Risk Management: the Milford Road**

The potential for a large-scale avalanche disaster on the Milford Road is well recognised. Various world authorities having commented on the severity of the problem. The risk is estimated as more than an order of magnitude more dangerous than normal highway travel – approaching the risk faced by helicopter operations in New Zealand. Analysis has concluded that avalanche problems on the Milford Road are as severe as on any other mountain highway in the world. An encounter with an avalanche on the Milford Road will generally not be survivable.

Most travellers do not appreciate the magnitude of the hazard to which they are exposed. In fact many travellers do not recognise that any hazard exists as avalanches are not within their domain of experience. There remains ongoing concern about the potential for a mass fatality on the Milford Road, especially in view of the rising avalanche hazard attributable to increased volumes of tourist traffic.

As part of an avalanche programme road closures are instigated when the avalanche danger is perceived as rising to critical (high) levels or when the weather is predicted to deteriorate with a probable increase in the avalanche danger. Road closures eliminate the chance of exposing the travelling public to the avalanche phenomena, and the risk of a fatality becomes zero.

Most winters there has been at least one near miss avalanche incident, typically involving, but not limited to, road maintenance contractor's operational staff. However, increased exposure of people in winter to Milford's avalanche terrain during the past decade serves to counteract some of the risk-lesening benefits brought about by the Milford Road avalanche programme.

The most appropriate response to the rising avalanche hazard is to openly communicate the risk to stakeholders. Transit New Zealand recognises the problems posed by the Milford Road. Their response to the risk has been to ensure that the road contractor and consultant's responsibilities are clearly specified and to promote awareness in the travelling public. The contractor has well-documented routine procedures for roading operations, weather monitoring, road closures and active avalanche control using explosives.

Additionally a website devoted to the hazards of the Milford Road is maintained by Transit; [www.milfordroad.co.nz](http://www.milfordroad.co.nz) explains the hazards and carries information on the current avalanche risks to travellers and guidance on appropriate action to take. The Department of Conservation and Transit New Zealand contractors have supported this initiative. A *Travel Tips for Travellers* brochure also relays this information. The major tourism sites stock these brochures and the Tourism Planning Toolkit put out by Tourism New Zealand also references the website and the brochures for tourism operators under good practice.

word contamination used in the reports with the layperson usage which is an abbreviation of 'toxic contamination'. It conjured up images of disasters such as Minamata and Bhopal.

The consequence of the council's action and news media coverage at the time was fear within the public:

- Property owners were fearful of financial impacts from reduced property values (or the expense of independent soil sampling).
- Residents were fearful of the health impacts of living in the identified homes.
- The public of Auckland was fearful of exposure to toxins through gardening and outdoor activities.

Once the extent of the public reaction became evident the council and others decided to re-examine the findings, bringing in independent experts for advice. The background of these people was such that they made an entirely different interpretation of the initial findings and the council then set about revising its response to one that was more proportionate with the risks. This included development of site investigation and soil sampling protocols for residential sites and soil sampling of council-owned land.

Hindsight provides the opportunity to learn from past experiences. In this case there were three opportunities where feedback could have assisted in more appropriate risk mitigation and response:

- Feedback from the council to the researchers and independent experts as to what they thought the results meant would have assisted in more appropriately shaping the actions of the council.
- Similarly if the media had initially sought greater feedback from scientists on the meaning of the terminology used in the reports they would have been better placed to understand the risks that were posed.
- The council could have sought greater feedback from the communities with regards to the impact of their actions and the risks that were raised by placing notices on the LIMs.

## **Levels of Action and Transience of the Learning**

### **Monitoring risk awareness**

The need to assess risk awareness exists at two levels, the first at the organisational level and the second at the level of specific organisational activities.

Risk sensing as a vital element of strategic organisational management has an internal and external component. Generally, organisations will have strategic plans against which to measure the significance of changes in the surrounding risk environment. A strategic plan is intended to dynamically position an organisation into its operating environment. It is designed to guide decisions and set directions that are always at risk due to external (for example monetary policy or

compliance regimes) and internal (for example skill base or disassociation of component parts) changes.

Risk management can never be successful in a reactive mode, as the organisation may not be able to manage the risk impact in time. Risk management must be dynamic and continual. When risk is not spotted in time it is generally because it was not anticipated.

It is important to ensure that the capacity and competency exists to undertake strategic risk assessment and communications. This is a prime responsibility throughout management and governance ranks, and needs to be clearly embedded, with clear accountabilities, in the management culture.

At the organisational level strategic risk can arise from such sources as:

- the nature, quality and continuity of information inputs to any course of action (again skill base is important here, as is technology);
- the quality and continuity of the relationship amongst the organisation's components that are assigned to an activity, and between the organisation and its clients or partners; and
- the appropriateness and robustness of the services and/or products being offered, and whether these are aligned with the organisation's vision and purpose.

It is critical that management and governance maintain oversight of (monitor) the capacity of the organisation to be 'risk aware' and to ensure that surveillance information, assessments and recommendations for actions are standard agenda items in management and governance meetings. The flow of information through the organisation is a critical management concern here as information needs are ever increasing, operating situations are complex, and time frames for decision and action can be very short.

At the second level of evaluating risk awareness arising from the organisation's actions these elements are essential:

- clear objective setting for the risk communications activity, with measurable targets as possible;
- clear identification of audiences and strategies for how to approach them;
- commitment to continual surveillance of audience uptake with predetermined time frames or trigger points for initiating monitoring; and
- management expectation and the process by which monitoring results are used to advance risk management.

Monitoring is a systematic approach to the collection of data and information and there are a number of standard strategies available, such as:

- regular personal contact with clients, partners and others (who might have useful views);

- tracking media, websites and other publications that may have impact;
- establishing feedback points (such as websites) and processes to draw in comments, and tracking input;
- regular reporting on project milestones; and
- periodic questionnaires and/or surveys.

What will success here look like? Organisations with effective monitoring and evaluation processes in place will be able to:

- be trusted and therefore effective in continuing their role;
- maintain delivery of services and products; and
- change these deliveries quickly through timely interventions.

### **Evaluating the risk communications process**

Any properly managed process includes evaluation of its effectiveness and, considering the risks organisations face, this is particularly important for risk communications. In practical terms however, this is more easily said than done.

The key principle is that risk communications must be consistent with the overall communications objectives of the organisation, which in turn have to be embedded in the overall management process of the organisation. As stated previously risk communications cannot be separated from other corporate functions.

The first requirement is to define outcomes in a manner that lends them to measurement. Clearly what constitutes success must be known, yet in some aspects of risk communications this can be subjective and affected by other communications emanating from the organisation or from other sources.

Once the outcomes and audiences have been determined and the communications strategies and activities defined, then evaluation is important for such reasons as:

- ensuring the communications are achieving their goals;
- identifying problems that require solution;
- maintaining a watching brief on known risks and identifying new ones;
- monitoring stakeholders' attitudes;
- understanding what strategies work and which do not work; and
- assessing cost-effectiveness.

It is important to engage others in the evaluation process. There are three key groups here:

- stakeholders who are the audiences for the risk communications;
- staff who have undertaken the risk communications for the organisation; and

- management and governance representatives for whom the risk management was implemented.

In dealing with stakeholders it is important to ask such questions as:

- Did they understand the objectives?
- How successful were the communications?
- What participation was needed and offered?

In dealing with staff involved in the communications it is important to ask such questions as:

- Were the right audiences identified?
- Were there sufficient resources available?
- Were the right delivery mechanisms chosen?
- Was their organisation sufficiently supportive and interested in the results?
- What other influences could be impacting on the communication success?

In dealing with management and governance it is important to ask such questions as:

- Are the results suitable for assessing the intent and for any related decision making?
- How did the results impact on organisational decision making?
- Are staff and resources cost effective?
- Are there changes in corporate intent?
- What other external factors might need to be considered?

A range of methods are available, including questionnaires, interviews (structured and unstructured), focus groups, observation and survey.

## **Embedding and Improving the Risk Communication Process**

### **Improving senior level understanding of risk communication issues**

One of the more complicated components of risk communication is when risk is communicated through a third party. This can typically happen when politicians or senior executives are the spokespeople on a risk, such as often occurs in a crisis. It is important that in times of crisis leaders take on the role of spokespeople but it can be difficult for the leaders if risk management is not embedded in their organisation.

Underpinning effective communication are openness and inclusiveness. Both within an organisation and between an organisation and its stakeholders, pre-established relationships and a level of trust are vital. Crises are characterised by a rapidly evolving and problematic series of events. Because of this, information

can rapidly become out of date and verification of information may not be as rigorous as normal circumstances would permit. It is therefore important that in a crisis situation spokespeople are aware of the accuracy and lifespan of information they receive and that they are able to relay this to other stakeholders. Doing this as a regular part of risk communication will provide good grounding for situations that may upscale and require crisis communication.

For public-owned organisations, especially, there is an expectation that consultation around risk decision-making will occur with a wide range of stakeholders. They also need to be aware of the interests of specific stakeholder groups. This is in part because of the flow-on effects of crisis impacts and in part because of the consultative process that would normally apply in any business project.

An example of when stakeholder expectations and spokesperson communication were not synchronised was the Waiheke Island foot and mouth scare in 2005. One of the few criticisms that was received regarding the way that the incident was handled was that specific stakeholders – farmers and residents of the island and surrounding areas – did not think that they had been appropriately informed of the response that was occurring and what they needed to do. In this case the spokespeople addressed all stakeholders with one message but the attempts of farmers to find out further information were not adequately accommodated.

The Federated Farmers President's Address to the Association of Former MPs in Wellington on July 13 2005 highlighted this, as have several other stakeholders in this incident:

*There also seemed to be little recognition of the need to communicate with livestock owners in the surrounding Auckland, Coromandel and Northland areas. They needed advice on how to minimise spread and the risk to themselves. Federated Farmers filled this gap by communicating directly to members. In contrast, MAF's (Ministry of Agriculture and Fisheries) communications appear to rely on communicating through the media.*

To ensure that participants in crisis risk communication are accommodated, senior level understanding and involvement is required as an ongoing component of risk management. Within this role senior level spokespeople can help to establish expectations of crisis response by discussing constraints that will likely occur. This can be a component of regular interactions with stakeholders at a strategic level or to a wider stakeholder group through newsletters or press releases.

An example is the ongoing role of Civil Defence Minister Rick Barker in maintaining awareness of activities that have been undertaken to address communications needs for a civil defence emergency. This has included updating the public on arrangements that have been made as well as explaining difficulties with implementing various suggested strategies.

The *Dominion Post* reported in October 2006:

*Civil Defence Minister Rick Barker says people can't rely on text messaging to warn them of an impending tsunami as Vodafone and Telecom's networks would soon clog up.*

*Speaking at a conference in Auckland last month, Mr Barker said it would take several hours to send civil defence warnings to all cellphones using available technology.*

*"The use of cell broadcasting technology does allow text messages to be sent simultaneously to all mobile phones in a predetermined geographical area, without having to queue messages." But New Zealand telcos do not have the equipment to do this.*

*A Tsunami Working Group, established after a civil defence forum in August, will look at "technical problems and costs associated with developing cell broadcasting", he says...*

Establishing a risk communication role for senior level spokespeople can be highly effective, especially in utilising the media to convey a message, but only if they are familiar with the expectations of and desired outcomes of their communications.

### **Organisational learning**

Another component of improving risk communication is learning from the past.

Both mistakes and successes provide learning opportunities for managing future risks and improving current risk management. The role of executives in supporting and contributing towards this makes embedding risk management and risk communication into an organisational culture more effective than when they are not involved.

For example, it can be difficult for middle management to implement a strategy without buy-in from all levels of the organisation. They should be willing to come under scrutiny for how they can improve their role in risk communications. Every person in an organisation has a role as a risk communicator, be it to their colleagues, business acquaintances, or to the public through friends and family.

Exploring the impacts that this can have on risk communication strategies by drawing on past experiences, as well as examining specifically overt risk communications that were (and continue to be) implemented, is a valuable way to identify components of risk communication that can be expanded upon and where remedial work is required. This can then be turned into inputs for further evolving the organisation's risk communication. For example, it may be that some staff are well known in the community and can act as a conduit. Others may have specific interests that relate to risks the organisation is seeking to address.

Following on from successes with health and nutrition initiatives, the Pacific Fam-

ily Violence Prevention Strategy (Ministry of Social Development) has undertaken to engage with Pacific communities through community groups, church and womens' groups and youth leaders to develop Pacific early prevention resources and strategies.

The objective is to change attitudes that contribute to violent behaviour in Pacific families. By recognising the key community focal points for influencing Pacific communities through previous public engagement on other risks, the Ministry of Social Development was able to target its risk communications.

Most organisations in New Zealand attempt to learn from previous experiences, with communication being a common failing that is frequently identified. One of the reasons that this comes up so regularly is that there can be an acceptance that communications will always be a problem. By further investigating the aspects of communication that did not perform there may be opportunities to refine future risk communication strategies to better meet the organisation and their stakeholders needs. Conducting this self-examination should be an integral part of a risk communication strategy.

### **Looking forward: identifying those issues on the horizon that require early implementation of risk communication strategies**

Regardless of the stakeholders and risks involved there is benefit to looking forward and preparing for implementing future risk communications

One critical aspect of a risk communication strategy is to establish an ongoing or ad-hoc risk communication group. This is ideally established proactively rather than responsively. An ad-hoc group might only meet intermittently to reassess risk communication for a given risk or class of risks that have yet to be realised. This is done to maintain currency of the strategy and group participants.

An ongoing risk communication group may meet regularly for the duration of a given risk management project or as part of the overall risk management programme of an organisation – looking at the full breadth of risks that the organisation is involved in managing.

The role of the risk communication group typically involves:

- Establishing a risk communications team – this might include a risk manager, a communications manager, a technical specialist and a senior manager. For whole of government teams the group may be quite expansive but for specific organisations teams could be as small as 2-3 people.
- Determining the objectives – this may include developing communication relationships with stakeholders; raising stakeholder awareness of risks; obtaining stakeholder input on risk strategies; establishing realistic expectations; identifying gaps in the current risk communication strategy; and specifying the scope within which communications will be bounded. For example, identifying what information can or cannot be discussed due to commercial sensitivity.



- Preparing a stakeholder map – identifying what concerns and interests different stakeholders have regarding a given risk; identifying stakeholders that have strategic, operational and consultative expectations; attempting to group stakeholders in order to better target risk communications.
- Determining appropriate fora and engagement schedules for communicating with stakeholder groups – identifying which stakeholder groups require ongoing interaction in shaping the risk management and which require intermittent information dissemination.
- Establishing relationships with stakeholders – finding and communicating through key contacts can optimise the value of risk communications by ensuring that the right people have the right communication and opportunity to respond.
- Monitoring and evaluating the effectiveness of stakeholder engagement – continuous monitoring to ensure that stakeholder relationships and interactions are ongoing maintains the currency of the risk communication.
- Maintaining the strategic communication objectives – checking that risk communications are continuing to contribute towards the objectives of the risk communication strategy and that the risk communication strategy and capacity evolves as necessary.
- The specifics of what and how will vary with different risk communications, but determining an approach that can be consistently applied and built upon such as this is often useful.

### **Case Study – Project Roadbridge**

Coal producer, Solid Energy uses risk management techniques, including risk communication principles, as part of its day-to-day approach to managing its projects and operations. The need to transport coal by truck, over an almost two-year period, to make up shortfall in rail capacity while the Midland Line was upgraded demonstrates the benefits that can be achieved as a result of implementing these techniques.

Solid Energy is a state-owned enterprise, and New Zealand's largest coal producer and distributor, with six underground and opencast mines in the Waikato, Southland and the West Coast of the South Island. Total coal production is around 4.5 million tonnes (mt) per annum, with about half exported and the remainder used within New Zealand for electricity generation and industrial/commercial energy.

Export coal from its West Coast mines is transported by rail on the Midland Line to the Port of Lyttelton, near Christchurch on the east coast, where it is loaded onto ships. Until the end of June 2006, the volume of coal that could be carried along the Midland Line was limited by several factors, including speed and weight restrictions along several portions of the railway track.

In July 2004 the Government set up the agency, ONTRACK, to own and main-

tain New Zealand's rail infrastructure. ONTRACK has been upgrading the line by improving ventilation in the Otira Tunnel, strengthening bridges and constructing crossing loops to allow the running of longer trains. In 2004 Solid Energy identified an opportunity to increase annual rail capacity from 2.1 mt to 2.4 mt by using an extra train running between Reefton and Lyttelton. But to do this coal would have to be transported by truck and trailer units from the Ngakawau coal handling facility, north of Westport, to the rail load-out at Reefton. Although not ideal, trucking coal was considered necessary to meet contracted international coal sales.

Up to 1,200 tonnes of coal per day, 7 days per week, had to be trucked from Ngakawau to Reefton to meet the new rail schedule. This equated to about 40 return truck movements, over a 24 hour day, via State Highways 67, 6 and 69. Transit's designated heavy trucking route includes the town of Westport, several small communities and the Buller Gorge with several sections of narrow and winding highway that is also a significant tourist route.

The temporary trucking operation was tagged Project Roadbridge by the company. By the time annual rail capacity was increased to 2.7 mt at the end of June 2006, Roadbridge had run almost continuously for 22 months – from August 2004 to June 2006. Until Roadbridge, Solid Energy had trucked coal only relatively short distances or for short periods of time. This trucking initiative represented a noticeable increase in heavy vehicle movements through several West Coast communities. Hence, it was likely to attract high public and stakeholder visibility.

Solid Energy brought together a multi-disciplinary team, led by the Logistics Manager, to plan and manage the implementation of Roadbridge. The team included operations, distribution, communications, environmental and risk staff. From the outset it was determined that the activities had to be undertaken to the highest standards to minimise risk to reputation and to the operation itself. Prior to the start of Roadbridge and for the first few months of the



*Truck and trailer units owned by the transport contractor, TNL Ltd.*

operation, the team met weekly, and thereafter regularly, to review progress and to identify and address risks. Only when the team felt that all elements were in place, was the decision made to start the trucking operation.

A key early initiative was a risk workshop, which brought together the Solid Energy team with external project members including the trucking contractor, TNL Ltd. (TNL). Among the many benefits of this exercise was the development of a comprehensive project implementation manual incorporating the risk controls and mitigations identified during (and subsequent to) the workshop.

The shared objectives developed by the group formed the foundation of the working relationship and commitment needed to deliver 'best practice' bulk goods transport over a sustained period of operation within a sensitive public environment. This was confirmed by the project partners receiving a specific commendation from the Land Transport Safety Authority, following its audit of the operation.

Given that the trucking operation would be a relatively high-profile activity on the West Coast, effective stakeholder communication and consultation was identified as a critical element of project planning and implementation. The initial risk workshop provided an excellent opportunity for the project team members to gain a shared understanding of the risks associated with the project, both from a company perspective and that of the trucking contractor. This was a valuable internal communication tool and underpinned the excellent relationship between all parties during the project implementation phase.

During the project planning stage the stakeholder communication and consultation plan was developed. Key elements included:

- identification of key messages that the company needed to communicate to internal and external stakeholders;
- the incorporation of past experience over several years with external consultation and communication within the local communities on mining issues;
- designation of various roles and responsibilities for stakeholder communications, including the media;
- identification of communication methods including community newsletters, letterbox drops for people along the trucking route, targeted face to face consultation with various parties including local government agencies and businesses, press releases, advertising and implementation of internal project information sharing and procedures for response to incidents; and
- development of public feedback mechanisms such as contact telephone numbers on each truck and trailer unit, names and contact numbers of

company representatives for each area covered by the trucking route and listed in community newsletters, plus protocols for responding to public feedback.

These activities enabled Solid Energy to identify specific concerns about the operation within the community and wherever possible incorporate mitigations into the project planning and implementation. This also facilitated a high level of engagement between key stakeholders and the project team, both prior to the operation commencing and as the trucking proceeded. Of note was that more stakeholder feedback was received before the trucking started than during the operation itself.

Driver performance was regarded as an area of significant risk as the project involved continual interaction with the travelling public. Although the trucking was carried out by a separate company, any issues or complaints about driver behaviour were likely to impact adversely on Solid Energy.

The trucking contractor, TNL, fully understood this and, in conjunction with Solid Energy, developed a detailed 'rule book' for the drivers. This was used as the basis for a project specific operator induction and training programme fully supported by an internal audit system. The outcome of this included zero traffic infringements recorded during the project and several cases of positive feedback from the public.

The table opposite provides a summary of several key issues identified in developing and implementing the project, the resulting initiatives that were implemented, and the outcomes.



*Part of the communication strategy was a visit to local schools by representatives from Solid Energy and TNL Ltd. to demonstrate to the local children the truck and trailer units to be used during the operation and highlight road safety.*

Solid Energy continues to develop risk communication strategies as a core component of engaging with stakeholders, for both new and existing projects. Risk communication is an interactive process producing benefits for all those involved. By undertaking to understand and address stakeholder concerns as a component of risk management the company has been able to contribute towards public safety, increase goodwill towards Solid Energy and improve quality assurance internally and with its partners – tangibles that would not have been achieved as successfully without the principles and disciplines offered by embracing risk communication techniques.

Issue	Initiative	Outcome
Identification of issues and development of controls or mitigations.	Risk workshop with representatives from all project parties.	Communication of project issues. Shared understanding of project objectives. Buy-in from all parties. Commitment to implementing controls and mitigations that benefited all parties. Identification of stakeholders and the need for a comprehensive and considered consultation and communication strategy.
Potential adverse public feeling impacting company reputation.	Stakeholder consultation and communication strategy.	Open communication channels to facilitate public feedback. Proactive dissemination of information, which could be managed by the company. Identification of opportunities to enhance reputation. Liaison established with roading authorities and maintenance contractors to ensure road repairs identified and repaired quickly.
Direct results of contractor actions could adversely impact on principal's reputation.	Compilation of comprehensive implementation manual for the project incorporating contractor operating procedures based around outcomes of risk workshop, together with driver induction and training programme with periodic on the job audits.	Positively influencing truck driver behaviour. Generated positive feedback from public. Gained special commendation from Land Transport Safety Authority. Over 18,000 loads and 4,500,000 km without a single traffic infringement.
Concerns raised about increasing heavy traffic movements outside local schools.	School visits by representatives of company and trucking contractor.	Raised awareness of potential hazards within school community. Voluntary imposition of reduced speed limits and flexible load scheduling. Reputation of company enhanced by demonstrating proactive approach to road safety. 18,000 truck movements with no incidents.



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1XX 48

## A

absolute 60-61, 63, 67  
abstraction 19  
acceptance 11, 36, 55, 70, 75, 83, 84, 94  
accident 43, 57, 61, 62  
activism 15  
actual 9, 21, 22, 311, 57, 63, 86  
ad-hoc 94  
advertise 43, 56, 67, 97  
advocacy group 5  
aircraft 20  
Alaszewski, A 32  
alert 6, 81-82  
allergy 40  
alpine fault 16  
analysis 6, 16, 21, 32, 33, 40, 63-65, 68-72, 85, 87  
analyst 18, 64-72  
analytical techniques 4  
anniversary 43  
apathy 11  
appreciative inquiry 36  
arrogant 3  
ASNZS 4360 2, 4, 5, 7, 63  
asthma 40  
Auckland 40, 84-88, 92, 93  
Auckland District Health Board 84  
Auckland Regional Council 84  
Auckland City Council 85  
Australian 74

## B

Ballantyne's 26, 76  
Bay of Plenty 46, 72  
behaviour 2, 4, 12, 18, 24, 29, 32, 38, 40, 83-84, 94, 98-99  
best practice 97  
Bhopal 88  
bias 6, 21, 31, 66  
biotechnology 30

blog 24, 51  
board of directors 50, 65, 67, 71  
Bookbinder, L 54  
boundaries 43, 67, 69  
brainstorming 16, 52  
breach of trust 9, 32  
breakdown 30-32, 41, 79  
breast cancer 59-60  
Britain 12, 31  
brochure 43, 46, 87  
BSE 31, 37, 38  
Buller Gorge 96  
Bush Administration 33  
buy-in 22, 65, 93, 99

## C

Cabinet 5, 20  
CAE 46  
campaign 10, 14  
cancer 3, 6, 59-60  
Cartwright Inquiry 32  
case study 12, 4-5, 13-14, 16, 20, 21, 23, 35-37, 40-41, 46-48, 55, 57-58, 72-75, 87, 95-99  
Center for Risk Communication 50  
change management 55  
Chernobyl 3  
Chess, C, 83, 84  
chief executives 5, 73, 75, 78  
children 15, 18, 43, 85-86, 98  
Chinese 44-46  
Christchurch 26, 76, 95  
citizens 3, 34, 39  
Civil Conversation 36  
civil defence 10, 45, 73, 81-82, 84, 92-93  
clarification 56, 82, 84  
client 25, 64-68, 71, 89  
coal 95-96  
collapse 16  
commitment 7-9, 13, 31, 39, 40-41, 89, 97, 99  
communication strategy 13, 14, 18, 21,

26, 49, 93-99  
 communicators 12, 15-16, 25, 30, 50, 81  
 competence 31, 34, 39, 54, 69  
 complacency 21, 44, 45, 83  
 compliance 49, 89  
 comprehension 18, 23  
 conceptualise 32, 34  
 concern 3, 12-14, 16, 19-20, 22, 24-26, 30, 33-35, 39-41, 49-50, 52, 54-55, 57, 61, 66, 71-72, 78, 81, 84-85, 87, 89, 95, 98-99  
 conditional probability 60-63  
 confidence 1, 29, 31, 36-37, 39, 41, 45, 49, 52, 65, 69  
 conflict 6, 32, 35-36, 38, 39, 41, 54, 58, 84  
 confusion 32, 34, 53, 63, 85, 86  
 consequences 2, 8, 10, 12, 18, 19, 20-23, 30, 32, 42, 63, 69, 71-72, 88  
 consultation 3, 4, 7, 16, 20, 25, 40, 52, 83, 92, 95, 97, 99  
 contamination 84-88  
 context 4, 7, 11, 21, 22, 38, 63, 86  
 controversies 6, 26, 32, 35-36, 50, 58  
 co-operation, 53, 58  
 cooperative behaviour 38  
 co-ordination 5, 8, 23, 38, 58, 72, 1, 4, 5, 52, 53, 79  
 cost 30, 38, 67-70, 72, 73, 90, 91, 93  
 cost-effective 90-91  
 courage 7-9  
 Covello, V 50-52  
 credibility 1, 15, 22, 29-33, 37, 39, 5, 79  
 crime 60  
 crisis 31, 49-51, 53, 76, 79, 81, 91-92  
 crisis communication 49, 92  
 criticism 11, 32, 52, 82, 92  
 Cronin, K E 37  
 Crown Law Office 85  
 cyanide 1

## **D**

dam 16  
 danger 10, 12, 16, 20, 40, 53, 57, 62, 76, 86, 87  
 David Smith 73  
 Davies, J C 102  
 death 23, 26, 61, 62  
 debate 32, 35-37, 70

deficit model 34-36  
 demographic 16, 25  
 Department of Conservation 87  
 Department of Labour 13  
 dialogue 3, 4, 35, 37-38  
 dietary supplement 5  
 dilemma 11-12, 63  
 director 25, 65, 71  
 disagree 3, 12, 20, 38  
 discovery 40, 77  
 disproportionate 2, 86  
 disruption 1, 25-26, 64, 72  
 dissemination 6, 24-25, 47-48, 86, 95, 99  
 district council 45, 47, 73, 75, 84  
 distrust 29, 30, 32, 34-35, 41, 81  
 doctor 30  
 Domestic and External Security Co-ordination (DESC) 1, 2, 5  
 dread 3, 12, 58  
 drug 60-61  
 drug trial 60-61  
 due process 31  
 dynamic forum 24-25

## **E**

earthquake 16, 21, 42-44, 61, 81-82, 84  
 East Coast 95  
 Eiser, J R 32  
 embed 3, 89-91, 93  
 emergency 13, 57, 66, 73, 76, 78, 82  
 emergency services 47, 57, 73  
 emotional 6, 9, 18, 24, 35, 58  
 empathy 9, 31, 53-55, 78  
 emphasis 10, 19, 22-23, 34  
 empowering 42-44, 65  
 Endreny, P 19  
 engineering 35, 52, 73-75  
 English 44  
 environment 5, 29, 37, 57, 73, 79, 88, 97  
 Environment Waikato 73-74  
 environmental 16, 25, 29, 33-34, 37, 39, 57, 96  
 EQC 42-46  
 EQ-IQ 43  
 eradication 40-41  
 erosion 74

erosion of trust 40  
 evacuees 46  
 evaluation 4, 7, 26-27, 78, 83-85, 89, 90, 95  
 event 1, 2-3, 6, 8-10, 12, 18-19, 21-22, 26, 30, 32, 42, 45, 47-49, 51-52, 54, 62, 64-65, 68, 70, 72-74, 76-77, 82, 91, 94  
 event-based 6  
 executive 5, 64, 71, 73-75, 78, 91, 93  
 expectations 11-12, 16, 25, 29, 35, 40, 45-46, 49-50, 75, 77, 86, 89, 92-95  
 expert 1, 3, 8, 12, 17, 20, 30, 31-32, 34-36, 39-41, 51, 56, 58, 61-62, 79, 82, 85, 88  
 external 4, 5, 18-19, 50, 66, 76, 78, 80, 88, 91, 97

## F

fact 11, 18-19, 21, 24, 35, 43, 45, 52, 79  
 factoid 79  
 factor 3, 18, 29, 31, 34, 39, 42, 50, 69, 71, 91, 95  
 family 42-43, 82, 93  
 farm 6, 46-47, 92  
 fear 3, 9-10, 12-14, 18, 20, 35-36, 42, 55, 80, 88  
 Federated Farmers 47, 92  
 feedback 23-26, 44, 49, 68, 78-79, 81-84, 86, 88, 90, 97-99  
 feedback loops 68, 82  
 finance 67-68, 74  
 financial impact 11, 18, 85, 88  
 fire 13-14, 23, 26, 50, 52, 55, 57, 76-78  
 Fischhoff, B 103  
 fisheries 12  
 flood plain 83  
 flooding 16, 46, 48, 65-66, 72-75, 83  
 food 30, 32, 38  
 formative evaluation 83  
 Franz Joseph glacier 16  
 Frewer, L 32  
 Friedman, S M 108

## G

gain 11, 18, 74, 97, 99  
 Gaw, S K 85-86  
 genetic engineering (GE) 35-36  
 genetic modification (GMO) 30, 35-36,

37  
 Gigerenzer, G 59  
 Gisborne 72, 81-82  
 global warming 33  
 GMOs 37  
 goal 19, 31, 49, 50, 65, 83, 90  
 goodwill 31, 99  
 governance 83, 89, 91  
 government 1, 4-5, 13, 17, 20, 31, 34, 38-39, 41, 45, 47-48, 56, 73, 82, 94-95, 97  
 government agency 4, 41, 82, 97  
 government Ministers 38  
 green-lipped mussels 6

## H

Hales, S 40  
 Hamilton 43  
 Hawkes Bay 43  
 HAZNO Act 4  
 health 5, 12-13, 29-35, 40, 41, 47, 49, 83-86, 88, 93  
 Health and Safety in Employment Act 13  
 Heath, R L 49  
 hiding 8-9, 11, 65  
 high-risk 45  
 hindsight 9, 88  
 historic 61-62, 74  
 HM Treasury, 30  
 honest 2, 8-9, 30-31, 34, 38, 41, 50, 70-71, 78, 93  
 horticulture 84-86  
 Hoskin, K 23, 48  
 hospital 32  
 House of Lords 29, 37  
 household 42-43  
 Hrudley, S E 105  
 Hulse, P 41  
 human life 18  
 humanise 6

## I

IAG NZ 72-76  
 impact 2, 11, 13-14, 18, 20, 25-26, 30, 32, 34, 40, 46, 67, 73-74, 82, 85-86, 88-93, 98, 99  
 imposed 3, 49, 66  
 inactivity 21, 22, 42, 83  
 inappropriate 29, 40, 54, 68

incompetence 34, 39, 54  
incorrect 62-63  
independence 6, 18, 38, 40, 41, 71-72, 82, 88  
influence 11, 15-19, 21, 30, 38, 54, 56, 65, 70, 78, 82-84, 91  
influencer 15, 19  
influenza 10  
insect 40  
insecticide 40  
insurance 42, 45, 72-75  
insurer 47, 72-75  
interaction 3, 5, 21, 23-24, 36, 79, 92, 95, 98-99  
interdependence 30  
interest 6, 16, 34, 47, 55-57  
interest groups 33, 35, 37  
internal 11, 25, 49-50, 78, 80, 88-89, 97-99  
international 1, 8, 34, 55, 58, 81, 84, 96  
internet 6, 25, 82  
interpretation 17-18, 29, 38, 42, 63, 81-82, 84-86, 88  
investment 39, 52-53, 65, 70  
investigation 6, 70, 74, 84, 88, 94  
involuntary 3, 78  
irrational 3, 4, 9, 65, 66

## **J**

jargon 25, 57, 58, 79  
Jasanoff 54  
Johnson, B 34  
journalists 5, 6, 58  
judging 7, 11, 18-19, 34, 38, 68, 82, 86

## **K**

key stakeholders 7, 8, 15, 47, 54, 77, 98

## **L**

Lanard, J 11  
land 52, 85, 86,  
Land Information Memoranda (LIMs) 45, 85  
Land Transport Safety Authority 97  
land-fill 6  
landslide 16, 42, 73  
language 12, 22, 39, 43-44, 58, 70, 81, 83, 84

layperson 12, 18-19, 32, 88  
Lee, T 21, 81  
legal 11, 14, 47, 52, 71  
legislation 4, 13-14, 26, 42  
legitimacy 52  
level of risk 7, 9, 13, 31  
lifestyle 25, 46, 47  
likelihood 2, 14, 31, 52, 63, 79  
lobby group 5, 34  
local government 47-48, 97  
long-term 5, 8, 11, 19, 30, 39  
loss 1, 18, 31, 39, 72-73  
lyprinol 5, 6

## **M**

Ministry of Agriculture and Fisheries (MAF) 40, 41, 92  
magazine 5, 56  
magnitude 2, 8, 14, 18, 63, 87  
mammogram 59-60  
management strategy 1  
manipulation 33  
Martin, J 29  
mass media 15, 51  
mathematics 59-60, 62-63, 69  
matrix 51  
McComas, K A 30  
media 1, 5-6, 15, 18-21, 24, 34, 43, 47, 51-58, 72-73, 81-82, 84-85, 88, 93  
media environment 5  
medical 3, 30, 32, 38  
medium 47, 54-55, 56  
Meertens, R M 107  
memorable 3, 15, 18, 19, 51  
mental maps 21  
mental models 36  
message maps 50-51, 58  
meta-risk 68  
migrant 44-45  
Mike O'Leary 82  
Miles, S 31, 38  
Milford Road 87  
Minemata 88  
Ministry for the Environment 85  
Ministry of Research Science and Technology (MORST) 35  
Ministry of Social Development 94  
misapprehension 20, 24

miscommunication 17, 60, 61-63  
 misconception 22, 27, 46  
 misinterpretation 29, 82, 86  
 mistake 41, 78, 93  
 misunderstanding 29, 55, 80  
 mitigation 1, 2, 5, 16, 20-21, 42-45, 75-76, 88, 97, 99  
 monetary policy 88  
 monitoring 4-5, 7, 20, 41, 52, 67, 79, 81, 87-89, 90, 95  
 Morgan, M 36  
 motivation 19  
 mountain 20-21, 87

## N

natural disaster 42-45, 72-73  
 natural hazards 16, 30, 45  
 New Zealand Herald 82, 86  
 negative event 30  
 New Orleans 21  
 New Zealand Ministry of Health 105  
 New Zealand Post 48  
 news media 5, 19, 57, 84, 88  
 newspaper 5, 25, 43, 51, 56, 60, 81  
 Ngakawau 96  
 North Island 20  
 Northland 23, 92  
 nuclear 17, 37  
 numbers 2, 6, 59-64, 67-68, 97  
 New Zealand Fire Service (NZFS) 14, 55, 57, 95

## O

objective 2, 19, 23, 26, 33, 38, 49, 55, 62, 66, 78, 81, 89, 90-91, 94-95, 97, 99  
 obstruction 36  
 official sources 6  
 Ohakune 21  
 ONTRACK 95  
 open 9, 34, 40, 52, 78, 86, 99  
 opencast mines 95  
 opinion 12, 15-16, 19, 30, 40, 48, 51-52, 54, 61  
 organisational accountability 54, 88  
 organisational learning 93  
 Otira Tunnel 96  
 outrage 3, 6-7, 9, 11, 78, 81-82  
 ownership 24-25, 42, 45, 55, 71-72, 85-

86, 88, 92

## P

Pacific 93, 94  
 Pacific Tsunami Warning Centre (PTWC) 81-82, 84  
 panic 9, 34  
 parliament 13, 37  
 Parliamentary Commissioner for the Environment (PCE) 33  
 participatory evaluation 83, 85  
 partnership 41, 73  
 patient 32  
 patients' rights 32  
 Patton, D E 21  
 perceived 3, 9-10, 13, 18, 20-21, 26, 29-31, 37, 39, 41, 70, 76, 87  
 perception 3, 8, 13, 17-19, 21-22, 26-27, 30, 32, 34, 39-40, 57, 81, 84  
 performance 11, 48, 63, 83, 94, 98  
 pest 41, 75  
 Peters, R G 39  
 physicians 37, 59  
 pilot project, programme 35, 37  
 placebo 61  
 police 1, 2, 48, 60  
 political 32-33  
 politician 34, 72, 91  
 population 21, 25, 45, 62, 69  
 Port of Lyttelton 95  
 potential issues 7, 8, 11  
 power 6, 15, 37, 56, 66  
 press 24, 43, 45, 55, 66-67, 82, 92, 97  
 Prime Minister 12, 20  
 print 56, 66  
 proactive 7, 11, 14, 19, 94, 99  
 probability 2, 14, 18, 32, 42, 59, 60-62, 63, 70, 84  
 procedure 1, 4, 40, 49-50, 66, 76-77, 82, 84, 87, 97, 99  
 profit-driven 6  
 progress 24-25, 35-37, 83, 97  
 Project Aqua 21  
 Project Roadbridge 95-6  
 prosecution 13-14  
 protest 6, 15, 83  
 protocol 4, 52, 88, 98  
 psychographics 16  
 psychological 8, 17, 24, 29, 64

public 13, 5-13, 16-20, 24-26, 29, 31-40,  
42-43, 46-48, 52, 54, 56, 67, 72-74,  
76, 79, 82-84, 87-88, 92-94, 96-99  
public awareness 10  
public education 42-43  
public relations (PR) 5, 34  
public safety 1, 2, 73, 99

## **Q**

qualitative 2, 16, 37, 63  
quantifiable 18  
quantitative 37, 63, 68-69, 84  
questionnaire 83, 90-91

## **R**

radio 5, 48, 57, 84  
Rangitaiki Plains 46  
rational 19-20, 65-66  
reaction 1-3, 9, 26, 66, 86, 88  
reactive 26, 89  
real 9, 41, 63, 68, 85  
reassuring 8, 12, 20-21, 31, 44-45, 53, 73  
recovery 5, 18, 47, 73  
Reefton 96  
regional council 16, 47, 57, 84  
relationship 2, 24, 30, 35-36, 46, 55-  
56, 63, 75, 79, 89, 91, 95, 97  
relative 2, 17, 44, 60-61, 63, 85, 96-97  
reliability 6, 29, 31  
reliable 38  
reporter 6, 19, 51, 54  
reputation 8, 11, 27, 96, 99  
research 12, 15, 18, 30, 32-35, 38-39,  
45, 49-50, 68-69, 74, 88  
residents 15-16, 20-21, 25, 40-41, 47-  
48, 74, 81-82, 85-86, 88, 92  
resilience 12, 76  
resource kit 43  
Resource Management Act 4  
response 3, 5-6, 10, 13-14, 19-21, 24-26,  
30, 39-40, 47, 50-51, 58, 72, 76, 78-  
79, 84, 86-88, 92, 97  
Rick Barker 92-3  
risk exposure 18, 45, 65  
risk manager 3, 7, 9-11, 59, 94  
risk treatment 7, 65-69  
risk treatment plan (RTP) 66  
river 16, 21, 47, 73  
river scheme 47

road 18, 61-62, 87, 98-99  
roading 55, 57, 74, 87, 99  
Rodrigue, C 21  
Rousseau, D 29  
Royal Commission 76-77  
Ruapehu 20-21  
rumour 10, 13  
rumour mill 11, 79

## **S**

safety culture 11  
Sandman, P 3, 8, 10-11, 14, 54, 56  
Sarewitz, D 33  
satisfaction 83, 84  
scare 3, 8-9, 13, 21, 38, 92  
scientific uncertainty 32-34  
scientists 3, 6, 12, 33-38, 41, 53, 82, 88  
secrecy 3, 38  
semi-quantitative 63  
senior management 4, 7, 11, 13, 66, 94  
sharing 53, 77, 97  
ship 17  
short-term 8, 11, 26, 40, 68  
silo 50  
simplification 15, 63, 69  
Singer, E 19  
skiers 20  
Slovic, P 30, 34  
Smith, A 64  
Smith, D 73  
smoke 23, 76-77  
smoking 33-34  
social network 51  
socio-economic 25  
socio-scientific 34  
soil 84-86, 88  
solid energy 95-99  
South Island 16, 95  
Southland 95  
special committee on nuclear propulsion  
17  
specialist 2, 13, 17, 55, 57, 75, 94  
speculate 11, 14  
spokesperson 15, 51-52, 56, 58, 91-93  
sports 21  
stakeholder mapping 16, 95  
state owned enterprise (SOE) 67  
static forum 24-25

statistics 18, 22, 59, 63, 70  
 stereotype 37, 39  
 Steve Ruru 75  
 stories 5-6, 11-12, 19, 21, 51, 56-58, 60  
 strategy 1, 5, 6, 10-11, 13-14, 17-19, 21, 22, 24-27, 33, 49-50, 53, 65, 83-84, 88-90, 92-95, 98-99  
 subsidence 52  
 suppress 11, 39  
 surgeon 31, 32  
 surgery 31  
 surveillance 89  
 survey 23-24, 37-39, 47, 83, 90-91

## T

tactic 49, 65  
 target group 67  
 targeting 4, 7, 9, 11-13, 15-17, 19, 21, 23, 25-27, 43, 48, 65, 67, 82, 89, 94, 95, 97  
 Te Kotahitanga 23  
 technology 17, 30, 34-35, 78, 89, 93  
 tectonic 43  
 television 5, 12, 26, 43, 44, 57, 81  
 Thames Coromandel 72-73, 75  
 third party 79, 91  
 threat 1, 2, 12, 26, 40, 71, 84  
 time frame 23, 25-26, 89  
 timing 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 26-27, 53  
 TNL 96-98  
 tolerance 5, 18, 68  
 Tonga 81  
 Tony Blair 12  
 tools 2, 15, 19, 21, 23, 45, 51, 53-54, 74, 87, 97  
 tourism 20, 87  
 Tourism New Zealand 87  
 tourist 20, 87, 96  
 toxic 1, 52, 85-86, 88  
 toxin 85-86, 88  
 tracking 83, 90  
 Transit New Zealand 87, 96  
 Trumbo 30, 37  
 trust 8, 18, 21-22, 29-32, 34-35, 37-41, 45, 51, 76, 83, 91  
 trustworthiness 8, 15, 30, 34, 78  
 tsunami 81-82, 84, 93

two-way 20, 27, 76, 79

## U

uncertainty 2-6, 10-12, 17, 29, 30, 32-34, 38-39, 50, 59, 62, 69-70  
 uncontrollable 3  
 unfair 3, 30  
 unfamiliar 3, 20  
 Union of Concerned Scientists (UCS) 33  
 United Kingdom 37  
 untrustworthy 3  
 United States of America 1, 33, 50

## V

value 4, 6, 18, 20, 22, 27, 30, 34-36, 38, 40, 52-54, 58, 63, 65, 68, 70, 82, 84-85, 95, 101  
 value judgement 68  
 verification 6, 82, 92  
 Victoria University 35  
 violence 94  
 visitors 20  
 volcano 20-21, 42, 86  
 voluntary 3, 78, 83, 99  
 voluntary acceptance 3, 78, 83  
 volunteer 13, 48, 114  
 vulnerability 5, 10, 18, 29, 33, 73

## W

Waikato 73-74, 95  
 Waitaki River 21  
 Walker, G 77  
 waste 1, 6  
 weather 72-74  
 weather bomb 73  
 websites 5, 8, 24-25, 43, 45-47, 87, 90  
 Weir, P L 87  
 Wellington 1, 35, 61, 92  
 well-meaning 31  
 West Coast 16, 40, 95-97  
 West Coast Regional Council 16  
 Westport 96  
 Whakatane 46  
 whole-of-government 5  
 wind 6  
 woman 59-60, 73  
 women 32, 59, 77







The third in CAENZ's Future series of risk management texts, *Challenging the Future* invites readers to extend their thinking on the communication of risk through practical application. This book is the culmination of three years investigation into risk communication practice in New Zealand and consists of both commentary and examples of risk communication in practice.

Building on previous work CAENZ has undertaken in this area, professionals in the risk and communication fields have come together to discuss and draw on their own and others experience and understanding of applying risk communication in New Zealand. The authors use case studies to illustrate the implementation of risk communication within organisations and with external parties ranging from contractors to the public.

Risk communication is a relatively young discipline, but is becoming increasingly important in environments where consultation and shared responsibility feature. Risk communication is an integral component of risk management and a focus of many communicators as it can be used to meet legislative and good practice requirements across a range of applications. It is hoped that through this publication readers will be able to apply some of the lessons shared by others to the implementation of risk communication in their own field of practice.

Written to appeal to a range of risk and communications professionals, this book visits risk communication from the perspective of risk managers, analysts, communicators and academics. The intent is to provide a practical resource for developing risk communication strategies by drawing on the disciplines of risk management and communications management. Recognising that risk communication needs vary greatly it is hoped that the examples in *Challenging the Future* will assist readers to challenge their own thinking and find innovative solutions to their risk communications needs.